TRANSCRIPT OF RECORD

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1907.

No. 14.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY, PLAINTIFF IN ERROR,

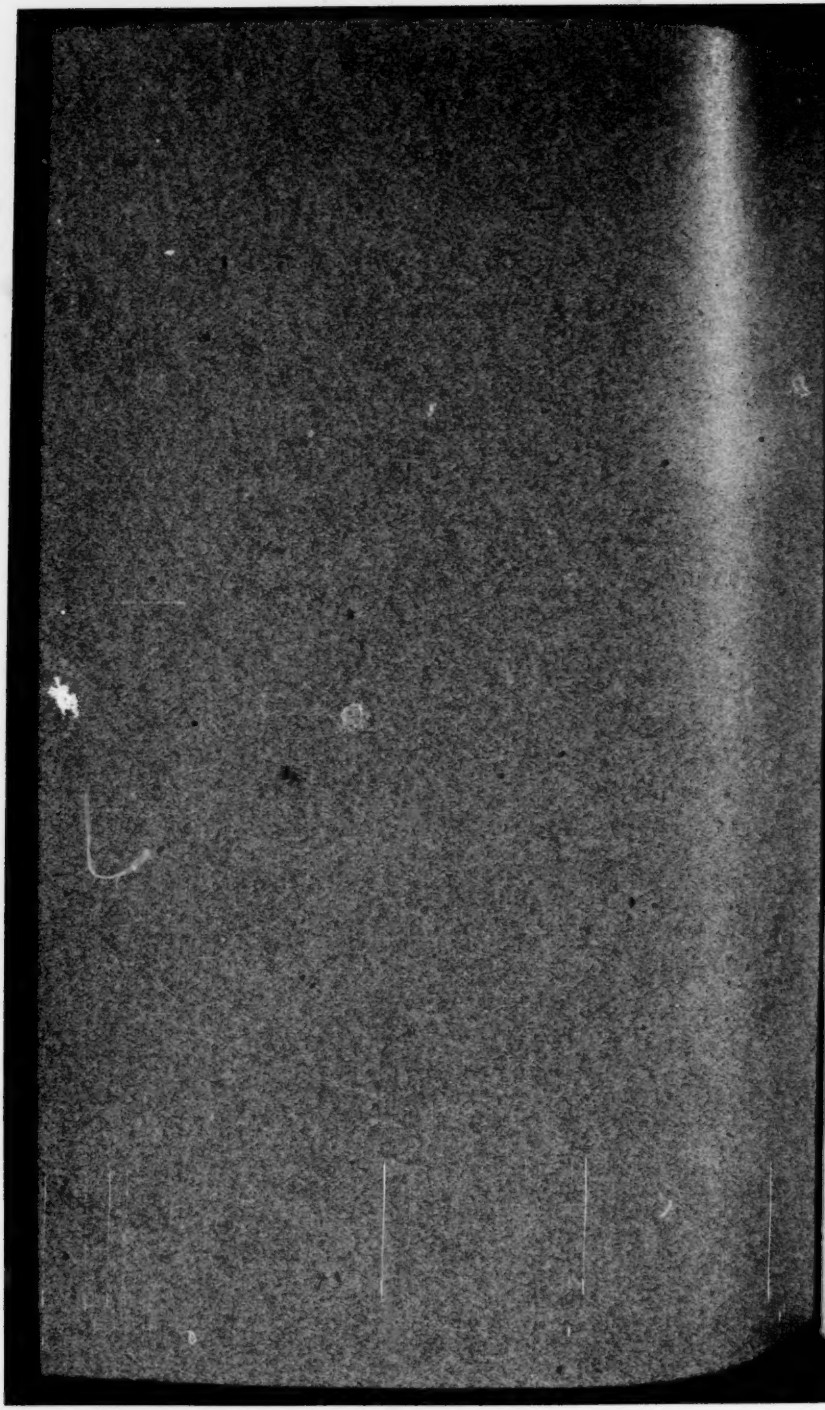
vs.

THE PATTEN PAPER COMPANY (LIMITED), THE UNION PULP COMPANY, ET AL.

IN ERROR TO THE SUPREME COURT OF THE STATE OF WISCONSIN.

FILED JUNE 12, 1907.

(16,321.)



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THE PATTEN PAPER COMPANY (LIMITED), THE UNION PULP COMPANY, ET AL.

IN ERROR TO THE SUPREME COURT OF THE STATE OF WISCONSIN.

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1 UNITED STATES OF AMERICA, *ss*:

[Seal U. S. Circuit Court, Eastern District Wisconsin.]

The President of the United States of America to the chief justice and judges of the supreme court of the State of Wisconsin, Greeting:

Because in the record and proceedings, as also in the rendition of a final judgment in a plea which is in the supreme court of the State of Wisconsin, the whole record in which plea is before you, being the highest court of law or equity of the State in which a decision could be had in said suit between The Pattem Paper Company (Limited), Union Pulp Company, and The Fox River Pulp and Paper Company, plaintiffs and respondents, against The Green Bay and Mississippi Canal Company, defendant and appellant; The Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore & Western Railway Company, defendants and respondents, wherein was drawn in question the validity of a title, right, and privilege claimed by the Green Bay and Mississippi Canal Company under statutes of the United States and under authority exercised under the United States — the decision was against the title, right, and privilege specially set up and claimed by said canal company under said statutes and authority, a manifest error hath happened,
2 to the great damage of the said Green Bay and Mississippi Canal Company, above named, as by its complaint appears, we, being willing that such error, if any hath been, should be duly corrected and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be given therein, that then, under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same at Washington on the seventeenth day of June next, in said Supreme Court, that, the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein to correct that error what of right and according to the laws and customs of the United States should be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the said

Supreme Court, this 18th day of May, A. D. 1896, and of the Independence of the United States the 120th.

EDWARD KURTZ, *Clerk.*

Allowed by me—

JOHN B. CASSODAY,

Chief Justice of the Supreme Court of Wisconsin.

This 18th day of May, A. D. 1896.

3 [Endorsed:] Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited) *et al.*, defendants in error. Writ of error. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, attorneys for pl'ff in error.

STATE OF WISCONSIN, } *ss:*
Supreme Court, }

The return to the within writ appears by the schedule hereto annexed.

The return of the justices of the supreme court of the State of Wisconsin.

CLARENCE KELLOGG, *Clerk.*

4 To the Honorable John B. Cassoday, chief justice of the supreme court for the State of Wisconsin:

The petition of the Green Bay & Mississippi Canal Company respectfully shows that in a suit between The Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs and respondents, against your petitioner and Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore & Western Railway Company, defendants and respondents, then pending on appeal from the superior court of Milwaukee county in the supreme court of the State of Wisconsin, it being the highest court of the State in which a decision could be had in said suit, on the 27th day of September, A. D. 1895, a judgment in favor of The Patten Paper Company and others, the respondents aforesaid, against your petitioner was entered in the superior court for Milwaukee county, Wisconsin, pursuant to the remittitur of said supreme court, but which judgment, as your petitioner charged, was not entered in compliance with such mandate, but which judgment, by means of an appeal therefrom to the said supreme court subsequently dismissed by order of said supreme court entered on the 10th day of

March, A. D. 1896, by means of a motion to vacate such order of dismissal entertained and subsequently denied on the merits by said supreme court by order entered on the 5th day of May, A. D. 1896, did not become the final judgment of said supreme court until said orders were entered, and did become the final judgment in said suit of the said supreme court and the said superior court on the said 5th day of May, A. D. 1896, and in and by which judgment dated the 27th day of September, A. D. 1895, but becoming final for execution on the 5th day of May, A. D. 1896, the said superior court and the said supreme court, after reciting as follows:

"And said judgment so entered in and by this court on the 19th day of January, 1894, having been reversed upon each of said separate appeals by the judgment of said supreme court, and said supreme court having remitted to this court the record and papers transmitted to said supreme court on said appeals, together with its decision, wherein, among other things, it decided and directed that this cause be, and the same is hereby, remanded to the said superior court, with directions to enter judgment in accordance with the opinion of this court," * * * adjudged:

"First. Upon motion of Hooper & Hooper, plaintiffs' attorneys, it is considered, adjudged, and decreed, as in favor of the Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp & Paper Company against all the defendants, that all of the water of the river, except that required for purposes of navigation, shall be, and is hereby, divided and apportioned between and to the south, middle, and north channels of the river in the following proportions—that is to say, $\frac{43}{200}$ thereof of right should flow down the south channel, $\frac{157}{200}$ thereof should of right flow down the main channel of the river north of Island No. 4, and that of the water so of right flowing down the main channel of the river north of Island No. 4 and above the middle channel $\frac{62}{157}$ thereof should of right flow down the middle channel and south of Island No. 3, and that of the water flowing down the north channel north of Island No. 4 and above Island No. 3 $\frac{95}{157}$ part should of right flow down the north channel and north of Island No. 3, and each of the parties to this action, their heirs, successors, and assigns, are forever enjoined from interfering with the waters of said river so as to prevent their flowing into said channels in the proportions aforesaid.

Second. Upon motion of Mess. Fish & Cary, attorneys for the said appellants, Kaukauna Water Power Company and others, and David S. Ordway, attorney for said appellants, Henry Hewitt, Jr., and William P. Hewitt, it is considered and adjudged upon the issues joined by the cross-complaint of the defendant Green Bay & Mississippi Canal Company and the several answers made thereto by the other parties to this action, defendants in said cross-complaint, that the water power which was created incidentally by the erection of said dam at Kaukauna is due to the gravity of the water as it falls from the crest to the foot of the dam proper across said river and not to the use of the water of said river through said canal, and that neither said State of Wisconsin nor said Green Bay & Missis-

sippi Canal Company, as assignee of said State, ever acquired or owned any water power upon said river at Kaukauna by reason of or as incidental to the construction and use of said canal for navigation.

Third. And it is further adjudged by the court that said Green Bay & Mississippi Canal Company, its successors and assigns, shall so use the water power, if at all, created by said dam as that all the water used for water power or hydraulic purposes shall be returned to the stream in such a manner and at such place as not to deprive the appellants or those claiming under or through them of its use as it had been accustomed to flow past their banks, and that
6 it shall flow past the lands of said appellants on said river and in the several channels of said river below said dam as it was accustomed to flow, and that said appellants have the right to use the water of said river, except such as is or may be necessary for navigation, as it was wont to run in a state of nature, without material alteration or diminution.

Fourth. And it is further adjudged that the relief demanded in said cross-complaint be denied except as hereinbefore adjudged."

The full record of which cause was then, at the time of the entry of said order of dismissal, before said supreme court upon appeal, and ever since then has remained and still remains before said court and under its control, and which record embraces the whole proceedings in said cause from the original service of process, including the original pleadings, the cross-complaint and the answers thereto, the bill of exceptions, testimony, stipulations, the first judgment of the superior court, entered January 19th, A. D. 1894, the three appeals taken from that judgment to the said supreme court, the judgment of the supreme court thereon, the remittitur by the supreme court to the superior court, as well as the said judgment of the superior court hereinbefore recited, and becoming the final judgment of the supreme court on the 5th day of May, A. D. 1896, affirming the said last judgment of the said superior court as having been made in substantial compliance with the mandates of the said supreme court on the first appeal, the whole of which record is now before your honor for inspection and examination.

And your petitioner further shows that in said suit and in the final judgment rendered therein there was drawn in question the validity of a title, right, and privilege derived by your petitioner from the United States of America, arising out of acts and proceedings theretofore taken by the United States and by the State of Wisconsin, as the agent of the United States, in improving the navigation of the Fox and Wisconsin rivers under and in pursuance of an act of Congress approved August 8, 1846, and also under an act of Congress approved July 7, 1870, and another act of
7 Congress approved July 10, 1872, and under a certain deed executed by your petitioner September 18, 1872, to the United States of America and accepted by them under the last-named acts, all which acts of Congress and deed are more fully described in the cross-complaint in said suit, in which several proceedings the State, as the agent of the United States, and the United States granted to

your petitioner all the water powers along the line of water communication between the Wisconsin river and the mouth of the Fox river created by the dams or other works of improvement, and an easement in the line of water communication, its locks, dams, and canals, for the protection and preservation thereof of said judgment of the supreme and superior courts, and the decision was against the validity of such title, right, and privilege, and other decisions were in and by said judgment made, appearing in the assignment of errors herewith presented, a copy whereof is attached and made a part hereof. In all such decisions manifest error hath happened, to the great damage of your petitioner, all of which appears in the record of said suit and proceedings now shown to you.

Wherefore your petitioner prays for the allowance of a writ of error from the Supreme Court of the United States to the supreme court of the State of Wisconsin, to the end that such errors, if any there be, may be corrected.

Dated May 18th, A. D. 1896.

EPHRAIM MARINER AND
BREESE J. STEVENS,
Attorneys for Green Bay & Mississippi Canal Company.

The statements and allegations of the foregoing petition found to be true, and the prayer thereof is granted and writ of error allowed this 18th day of May, A. D. 1896.

JOHN B. CASSODAY,
Chief Justice of the Supreme Court of the State of Wisconsin.

8 [Endorsed:] Green Bay & Mississippi Canal Company, petitioner, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Company, and others, respondents. Copy of petition for writ of error. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, att'ys for petitioner.

9 The United States of America to The Patten Paper Company (Limited), Union Pulp Company, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore and Western Railway Company, Greeting:

You are hereby cited and admonished to be and appear at the Supreme Court of the United States, to be holden at Washington, on the seventeenth day of June next, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Wisconsin,

at the office of the clerk of said court, at the city of Madison, in the State of Wisconsin, wherein The Green Bay & Mississippi Canal Company is plaintiff in error and you are defendants in error, to show cause, if any there be, why the final judgment rendered against said plaintiffs in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

In Witness the Honorable John B. Cassoday, chief justice of the supreme court of the State of Wisconsin, this eighteenth day of May, in the year of our Lord one thousand eight hundred and ninety-six.

JOHN B. CASSODAY,
Chief Justice of the Supreme Court of Wisconsin.

[Endorsed:] Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis.

10 [Endorsed:] In Supreme Court of the United States. Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Company, & others, defendants in error. Citation. Original. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, att'ys for pl'ff in error.

11 Know all men by these presents that the Green Bay and Mississippi Canal Company, principal, and Charles F. Pfister and William Mariner, as sureties, are held and firmly bound unto the Patten Paper Company (Limited), the Union Pulp Company, the Fox River Pulp and Paper Company, the Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, the Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and each of them in the sum of twenty thousand dollars, to be paid to them, the said Patten Paper Company (Limited), the Union Pulp Company, the Fox River Pulp and Paper Company, the Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, the Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, and each of them, their and each of their successors, executors, administrators, and assigns; to which payment, well and truly to be made, we bind ourselves, our and each

of our successors, heirs, executors, and administrators, firmly by these presents.

Sealed with the seal of the Green Bay and Mississippi Canal Company and executed by its president and secretary and sealed with the seals of said sureties and dated this 18th day of May, 1896.

Whereas the above-named The Green Bay and Mississippi Canal Company hath prosecuted a writ of error to the Supreme Court of the United States to reverse a judgment heretofore rendered in favor of the said obligees against the said obligor in the supreme court of the State of Wisconsin, directed to said court:

12 Now, therefore, the condition of this obligation is such that if the above-named The Green Bay and Mississippi Canal Company shall prosecute its said writ of error to effect and answer all damages and costs if it shall fail to make good its plea, then this obligation shall be void; otherwise the same shall be and remain in full force and virtue.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY,
By E. MARINER, *Pres.*
[CORPORATE SEAL.] AUG. LEDYARD SMITH, *Secretary.*
CHAS. F. PFISTER. [L. S.]
WILLIAM MARINER. [L. S.]

In presence of—
HENRY KESSENICH.
KATHERINE KLUG.

STATE OF WISCONSIN, } ss:
Milwaukee County, }

We, William Mariner and Charles F. Pfister, being duly sworn, each for himself says that he is worth the sum of twenty thousand dollars in property not exempt from execution and over and above all debts and liabilities, and that he is a freeholder and resident of the State of Wisconsin.

CHAS. F. PFISTER.
WILLIAM MARINER.

Subscribed and sworn before me this 18th day of May, 1896.
JOHN W. MARINER,
[NOTARY SEAL.] *Notary Public, Milwaukee Co., Wis.*

I approve of the foregoing bond and of the sufficiency of the sureties therein and accept the same as good and sufficient security upon the writ of error in the foregoing-entitled cause. Dated May 18th, A. D. 1896.

JOHN B. CASSODAY,
Chief Justice of the Supreme Court of Wisconsin.

13 [Endorsed:] Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Company, & others, defendants in error. Copy of supersedeas bond. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis.

14 In Supreme Court of the United States, of October Term, in the Year of Our Lord One Thousand Eight Hundred and Ninety-five, to wit, on the Seventeenth Day of June, A. D. 1896.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Error,

vs.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, Fox River Pulp & Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore & Western Railway Company, Defendants in Error. } In Error.

Afterwards, to wit, on the 17th day of June, A. D. 1896, in this same term, before the justices of the Supreme Court of the United States, at the Capitol, in the city of Washington, come the said plaintiff in error above named, by its attorneys, Ephraim Mariner and Breese J. Stevens, and say that in the record and proceedings aforesaid there is manifest error, in this, to wit:

First. That the complaint aforesaid and the respective answers to the plaintiff in error's cross-complaint aforesaid and the matters therein contained are not sufficient in law for the said Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp & Paper Company, plaintiffs below and defendants in error, or for any of said defendants in error, to have or maintain the aforesaid action thereof against said plaintiff in error.

Second. There is also error in this, to wit: That by the record aforesaid it appears that the judgment aforesaid given was given for the said defendants in error, whereas by the law of the land the said judgment ought to have been given for the said plaintiff in error against the said defendants in error.

15 Third. There is also error in this, to wit: In said suit and the final judgment rendered therein there was drawn in question the validity of a title, right, and privilege derived by your petitioner from the United States of America, arising out of acts and proceedings theretofore taken by the United States and by the State of Wisconsin, as the agent of the United States in improving the navigation of the Fox & Wisconsin rivers, under and in pursuance of an act of Congress approved August 8th, 1846, and also under an act of Congress approved July 7, 1870, and another act of Congress approved July 10, 1872, and under a certain deed executed by your

petitioner September 18, 1872, to the United States of America and accepted by them under the last-named acts, all of which acts of Congress and deed are more fully described in the cross-complaint in said suit, and in which several proceedings the State, as the agent of the United States, and the United States granted to your petitioner all the water powers along the line of water communication between the Wisconsin river and the mouth of the Fox river created by the dams or other works of improvement, and an easement in the line of water communication, its locks, dams, and canals, for the protection and preservation thereof, and the decision of said judgment of the said supreme and superior courts was against the validity of such title, right, and privilege.

Fourth. There is also error in this, to wit: By and under said judgment of the supreme court of Wisconsin the water powers and easement in aid of same in controversy, property of said plaintiff in error, were taken from the plaintiff in error, whereby it was deprived of the enjoyment thereof and of its right and title thereto acquired by virtue of the reservation and grant of the United States made in the deed of the said Green Bay and Mississippi Canal Company to the United States, dated September 18, 1872, which reservation and grant from the United States to the plaintiff in error was duly made in proceedings under and duly taken and
16 had pursuant to the acts of Congress and of the legislature of Wisconsin mentioned in the plaintiff in error's cross-complaint in said suit and herein briefly referred to, to wit, an act of Congress approved August 8, 1846, making a grant of lands to aid in improving the navigation of public waters of the United States, the acts of the legislature of the State of Wisconsin approved June 29, 1848, accepting the grant made by said act of Congress, and August 8, 1848, providing for a board of public works, and the acts amendatory thereof and supplemental thereto, all passed for the purpose and in the execution of the trust created by said act and grant of Congress, and the said acceptance thereof; the acts of the legislature approved July 6, 1853, and October 3, 1856, and acts amendatory thereof and supplemental thereto, transferring the execution of said trust to the Fox and Wisconsin Improvement Company and its successor, the Green Bay and Mississippi Canal Company, and the acts of Congress approved January 7, 1870, and July 10, 1872, and acts of Congress and of the legislature supplemental thereto, providing for the acquisition by the United States of the property and rights of property of the Green Bay and Mississippi Canal Company in and to the line of water communication between the Wisconsin river and the mouth of the Fox river, including the works of improvement, etc., to all of which reference is here made, and by which said judgment the said acts of Congress and of the legislature of the State were so interpreted and enforced and the proceedings of the United States and the State thereunder so far annulled, set aside, and held for naught that the right and title to said water powers and easement so acquired by the plaintiff in error were destroyed, the said decision being against the right and title

of said plaintiff in error set up and claimed under said acts of Congress.

Fifth. There is also error in this, to wit: The water powers and easement in question were acquired under proceedings had pursuant to the said acts of Congress, and especially the act ap-
17 proved July 7, 1870, by which act the arbitrators were, in effect, required to award to the canal company the cost of the works of improvement, less depreciation by wear and decay and less proceeds of the sales of lands granted by Congress in aid thereof; and in case the Secretary of War should elect not to take all of the property and rights of property of the canal company in such work of improvement, they should deduct a corresponding part of the cost aforesaid, which should be withheld from the canal company. The Secretary of War did elect not to take the water powers created by the dams and by the use of the surplus water not required for navigation, with the rights of protection and preservation appurtenant thereto, and did elect to leave the same to the company and require the company to surrender of the award a large and corresponding part thereof. The water powers and easement in aid thereof in controversy were part of the water powers so left to the company and for which abatement from the award was made and in substance were specifically described in the report of the arbitrators as water powers then under lease and in use by said company. The judgment deprives the canal company of the water powers and easement in controversy and creates an obligation on the part of the United States to pay to said company the value of such powers and easement or the money value or cost thereof so withheld improperly unless there be error in such judgment. The decision of said judgment is against the right, title, and privilege set up and claimed by the plaintiff in error under the acts of Congress and the State in the aforesaid third and fourth assignments of error and in the cross-complaint in said suit mentioned and to which reference is made.

Sixth. There is also error in this, to wit: Plaintiff in error's title, right, and privilege to the water powers and easement in aid thereof in controversy were considered by this the Supreme Court of
18 the United States in the case of The Kaukauna Water Power Company and others, therein plaintiff- in error, and The Green Bay & Mississippi Canal Company, therein defendant in error, reported in volume 142 of the United States Reports, at pages 254, etc., and upon the same facts the said title, right, and privilege were sustained by this court, and the plaintiff in error nowhere was adjudged to be the owner thereof, the said court adjudging—

That "under the circumstances of this case we think it within the power of the State to retain within its immediate control such surplus as might incidentally be created by the erection of the dam" (here referring to the dam in question). * * * "The dam was built for a public purpose, and the act provided that if in its construction any water power was incidentally created it should belong to the State, and might be sold or leased in order that the proceeds

of such sale or lease might assist in defraying the expenses of the improvement."

The water powers and easement in controversy were under lease and in use by the plaintiff in error at the time the judgment of this court in the aforesaid suit was entered and at the time the said suit was commenced, and were so used in all respects the same as they were being used at the time of the commencement of the suit now here before the court and the entry of judgment herein. The dam in question extends from the south bank of the river to the first lock on the north bank; or if any part thereof be canal and not dam, the "work of improvement" extends from the "cross-dam" to the said first lock. The decisions of the said judgment of the supreme court of Wisconsin are against the title and right of the canal company, plaintiff in error, to the water powers so created by said dam and other work of improvement and the use of the surplus water not needed for navigation, acquired by the plaintiff in error by purchase under authority exercised under the United States and sustained by this court, and are against the title and right sustained by this court, to wit, title and right of the canal company, plaintiff in error, to the water powers created by the said dam and the use of the surplus waters not needed for navigation, and
19 are against the title, right, and privilege set up and claimed by the plaintiff in error under the acts of Congress and of the legislature in the aforesaid third and fourth assignments of error mentioned.

Seventh. There is also error in this, to wit: The water powers and easement in aid thereof in controversy, property of the plaintiff in error, were taken by the United States and the State acting for the United States for a public purpose, and were sold and granted to the plaintiff in error, yet thereafter, by and under the said judgment of the supreme court of Wisconsin, the same were adjudged to be so taken under the acts of Congress and of the legislature in the third and fourth assignments of error mentioned as interpreted and enforced by said judgment for a private and not for a public purpose, and the said plaintiff in error is thereby deprived of his said property without due process of law and contrary to the provisions of the fourteenth amendment to the Constitution of the United States.

Eighth. It was error for the said supreme court of Wisconsin to decide that the acts of Congress and of the legislature in the aforesaid third and fourth assignments of error mentioned, more particularly the acts of Congress approved August 8, 1846, and July 7, 1870, and the act of the legislature approved August 8, 1848, as construed, interpreted, and enforced by its said judgment, did not authorize and direct the taking of all of the water powers created by reason of the dam and works of improvement in question and the use of all waters over and above that which was required for the purposes of navigation, and did decide against the validity of the said acts of Congress and of the legislature to authorize and direct the taking of the same as aforesaid, and in so deciding it did deprive the plaintiff in error of its property without compensa-

tion and without due process of law and contrary to the provisions of the Constitution of the United States and of the fourteenth amendment thereof.

20 Ninth. There is also error in this, to wit: That by the said final judgment the supreme court of Wisconsin enforced the said acts of Congress of August 8, 1846, and July 7, 1870, and of the legislature of Wisconsin approved August 8, 1848, so as to deprive the plaintiff in error of its property without due process of law and contrary to the provisions of the Constitution of the United States and the fourteenth amendment thereof.

Tenth. There is also error in this, to wit: By and under said judgment the supreme court of Wisconsin in holding and deciding that the canal company, plaintiff in error, be perpetually enjoined from drawing water for hydraulic power from the canal or extension of the dam down to the first lock thereby deprived the plaintiff in error of the value of its aforesaid water powers and the easement in aid thereof in controversy, acquired from the United States, and takes and appropriates to private purposes the waters taken by the State, acting for the United States, for public purposes, and therein decides against the right and title of the plaintiff in error in and to the same and against the validity of the said acts of Congress approved August 8, 1846, and July 7, 1870, and of the legislature approved August 8, 1848, so far as the same are involved in such holding, and takes the property of plaintiff in error for a private purpose without due process of law and contrary to the provisions of the Constitution of the United States and the fourteenth amendment thereto.

Eleventh. There is also error in this, to wit: The original suit herein was between The Patten Paper Company (Limited) and others, plaintiffs, against The Kaukauna Water Power Company and others, its tenants, defendants, to enjoin a diversion of water by The Kaukauna Water Power Company and its tenants, defendants, to which suit the Green Bay & Mississippi Canal Company and others, its tenants, were made parties defendant for the

21 sole purpose of having before the court all the parties interested in the water power. The title of the Green Bay & Mississippi Canal Company as riparian owner of the north bank of the river and their right to use the water power appurtenant to the north bank of the river from the pond through their canal was admitted in the complaint, and the right of the Kaukauna Water Power Company, as riparian owner of the south bank of the river, to draw one-sixth part of the water from the pond through its canal down the river and below the pond of the plaintiff was also admitted or not controverted in the complaint. The Kaukauna Water Power Company answered, claiming its right as riparian owner of the south bank of the river to draw the water appurtenant to the south bank of the river through its canal and discharge the same into the river below the pond of the plaintiffs. The Green Bay & Mississippi Canal Company answered, admitting its claim of title to the north bank of the river and admitting and asserting its right to draw and that it did draw through its canal the water appurtenant

to the north bank of the river and did discharge it through the mills of its tenants into the river at the head of the pond of the plaintiffs. It also filed a cross-complaint in the nature of a cross-bill, in and by which it claimed as the grantee of the State and of the Fox & Wisconsin Improvement Company, by reason of having constructed the dam, improvement, and canal in question under the acts of Congress and of the State legislature, the whole of the water power of the river created by the dam, the works of improvement, and the canal in question, including the pond in question. The plaintiffs and the other defendants not tenants of the canal company deny this claim of the canal company, and on the trial before the superior court the issues only were tried which were raised upon the cross-complaint, and judgment was rendered thereon sustaining the claim of the canal company, which judgment adjudges, among other things, as follows, to wit:

22 "That the defendant The Green Bay & Mississippi Canal Company is the owner of and entitled as against all of the parties to this action and their successors, heirs, and assigns to the full flow of the river not necessary for navigation from the said upper or Government dam across the Fox river at Kaukauna, and is not obliged to permit any of the water of the river or pond to flow over the dam, but is entitled to withdraw from the pond made by said dam all of the surplus waters not necessary for navigation, either through the canal extending from the pond to slack water below the rapids or directly from the pond, and use the same from said canal or said pond and let such water to others to be used wherever it may be available for water power and return the same to the river where it shall see fit, and is not obliged to permit any of the water from the river or pond to flow over said dam; and,

Second. It is further considered and adjudged that all and singular the other parties to this action are hereby forever enjoined from interfering with the said Green Bay & Mississippi Canal Company and so withdrawing and using such water.

Third. It is further considered, adjudged, and decreed as in favor of the Patten Paper Company against all the other defendants that all the water of the river which is permitted by the Green Bay & Mississippi Canal Company to flow over the upper dam or into the river above Island No. 4 so as to pass down the river should be, and it is hereby, divided and apportioned between the plaintiffs and their successors and assigns, the Kaukauna Water Power Company, and its successors and assigns, and the Green Bay & Mississippi Canal Company and its successors and assigns, between and to the south, middle, and north channels of the river in the following proportions—that is to say, $\frac{43}{200}$ part of the water so permitted to flow down the river of right should flow down the south channel, $\frac{57}{200}$ of the whole flow of the river so permitted to flow over the dam should of right flow down the main channel of the river north of Island No. 4, and that of the water so permitted to flow down the main channel of the river north of Island No. 4 and above the middle channel $\frac{62}{157}$ thereof should of right flow down the middle channel and south of Island No. 3, and that

of the water flowing down the north channel north of Island No. 4 and above Island No. 3 $\frac{95}{157}$ part should of right flow down the north channel and north of Island No. 3, and each of the other parties to this action, their heirs, successors, and assigns, are forever enjoined from interfering with the waters of said river so permitted to flow over the dam or into the river above Island No. 4 so as to prevent their flowing into said channels in the proportions aforesaid."

And from which judgment three separate appeals were taken, one by the Patten Paper Company and others, plaintiffs in said main action, another by the Kaukauna Water Power Company, its tenants, and others, defendants in said main action, and one by Henry Hewitt, Jr., and William P. Hewitt, defendants in said main action, all of such appeals being from parts of the judgment rendered and entered herein on the issues joined on the said cross-complaint of the Green Bay & Mississippi Canal Company on the said 19th day of January, 1894, which appeals took to the supreme court only the issues raised by the cross-complaint
23 and the answers thereto; that upon the hearing before the supreme court of Wisconsin that court reversed the judgment and remanded the cause, with directions to enter judgment according to the opinions delivered by that court. Upon the return of the record the superior court of Milwaukee county rendered a judgment in the cause pursuant to the mandate, omitting all consideration of the plaintiff's original complaint and answers thereto in the main action, by which judgment so entered there is taken from the canal company the right to draw the water from the pond through the canal on the north side, and requires it to return the water from the pond into the river at or near the foot of the dam, and thereby deprives the canal company and its tenants of the right to carry the water appurtenant to the north bank of the river from the pond through the canal on the north side of the river and discharge it through the mills of its tenants into the river below, contrary to the admissions in the complaint of the plaintiffs and the answer of The Kaukauna Water Power Campany, which company was the principal defendant in said suit. From this judgment last mentioned the canal company appealed to the supreme court of Wisconsin, and the supreme court, on motion of the plaintiffs in the original cause and The Kaukauna Water Power Company and its tenants, defendants, dismissed such appeal on the ground that the judgment entered was made in accordance with the mandate of the supreme court, and subsequently thereto, on the consideration of a motion made by the canal company to reinstate said appeal entertained by the court, entered its order denying the same upon the merits on the 5th day of May, 1896, and whereby the said judgment of the superior court did not become the final judgment in said suit and the judgment of the supreme court until the entry on the 5th day of May, 1896, of said order denying said motion; that in and by said judgment so become final the canal company is deprived of its
24 property, to wit, the right to draw the surplus water from the pond through its canal and to discharge the same through

the mills of its tenants into the river below, so that it is prevented from uniting its water power in the pond above the cross-dam, adjudged to it by the Supreme Court of the United States (142 U. S., 254), with the fall on its own land between the pond above the cross-dam and the place of discharge in the river, and this is effected by the judgment of the Supreme Court in an action in which it never had jurisdiction of the question, but had only jurisdiction of the question as to whether the canal company, as grantee of the United States, the State, and the Fox & Wisconsin Improvement Company, which had created this water power under the acts aforesaid, was the owner of the whole of the water power created by said dam & works of improvement on the Kaukauna rapids or not, and in so deciding the supreme court of Wisconsin did deny the rights so acquired from the United States by the plaintiff in error, and did declare against the validity of the title and right acquired through proceedings duly taken under the acts of Congress and of the legislature aforesaid, and thereby deprive plaintiff in error of said property without due process of law and contrary to the provisions of the Constitution and the fourteenth amendment thereof.

Wherefore the plaintiff in error herein prays that the judgment of the supreme court of Wisconsin aforesaid and of the said superior court, made final as aforesaid, may be reversed, annulled, and altogether held for nothing so far as appealed from, and that they may be restored to all things which they have lost by occasion of said judgment.

EPHRAIM MARINER AND
BREESE J. STEVENS,
Attorneys for Plaintiffs in Error.

[Endorsed:] Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis.

The foregoing assignments of error were duly presented to me this 18th day of May, A. D. 1896, before allowing the writ of error in such cause of even date.

JOHN B. CASSODAY,
Chief Justice Supreme Court of Wisconsin.

25 [Endorsed:] In Supreme Court of the United States. Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Company, & others, defendants in error. Assignments of error. Original. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, att'ys for pl'ff in error.

26 Supreme Court of the United States.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY *et al.*, Plaintiffs in Error,
vs.
THE PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Error.

STATE OF WISCONSIN, } *ss:*
Outagamie County, }

Wm. W. Ormsbee, Jr., being duly sworn, says that he served a copy of the annexed writ of error, citation, and supersedeas bond upon John Jansen and Peter Reuter personally on the 26th day of May, 1896, at Kaukauna, and upon David McCartney at Fort Howard, in the State of Wisconsin, by delivering to and leaving with each of them true copies thereof, and that he also served copies of said papers upon the Western Paper Bag Company, which is successor of the Kaukauna Paper Company, by delivering the same to and leaving them with William W. Ormsbee, Jr., who is the resident agent of said company, and upon the American Pulp Company, a corporation which has gone out of business, by delivering copies thereof to and leaving them with Oscar Thilmany, who was the last secretary of said company, at said Kaukauna, on the eighth day of June, 1896, and this deponent further says that he is informed by Peter Reuter, brother of said Alexander Reuter, that said Alexander died in Oregon July 10th, 1893.

WM. W. ORMSBEE, JR.

Subscribed and sworn to before me this 10th day of June, 1896.

J. C. MITCHELL,
Justice of the Peace, Outagamie County, Wisconsin.

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

27 Supreme Court of the United States.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY *et al.*, Plaintiffs in Error,
vs.
THE PATTEN PAPER COMPANY *et al.*, Defendants in Error.

We acknowledge service of a copy of the writ of error, citation, and supersedeas bond in the above-entitled case this 3rd day of June, 1896.

VROMAN & SOLE,
Attorneys for David McCartney, Defendant-in Error.

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

28 Supreme Court of the United States.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY *et al.*, Plaintiffs in Error,
vs.
THE PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Error.

I hereby acknowledge due personal service of a certified copy of citation and copy of writ of error and supersedeas bond in the above-entitled cause upon me this 23d day of May, 1896.

Witness my hand.

GEO. G. GREENE,
Of Counsel for Patten Paper Co. (Limited), Union Pulp Co., and Fox River Pulp & Paper Co.

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

29 Supreme Court of the United States.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY *et al.*, Plaintiffs in Error,
vs.
THE PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Error.

STATE OF WISCONSIN, *Outagamie County*, } *ss*:

Frank Biermann, being be me duly sworn, on oath deposes and says that he is a resident of the city of Appleton, Wisconsin; that on the 25th day of May, 1896, at the city of Appleton, Wisconsin, between the hours of eleven a. m. and five p. m. of that day, he duly and personally served the annexed citation, writ of error, and bond upon Augustus L. Smith, Herman Erb, and Asel W. Patten, defendants in the above-entitled action, by then and there delivering to and leaving with each of them, personally, a true copy thereof. Deponent further says that on the 27th day of May, 1896, about the hour of ten o'clock in the forenoon of that day, at said city of Appleton, he duly and personally served the annexed citation, writ of error, and bond upon Henry D. Smith, defendant in the above-entitled action, by then and there delivering to
30 and leaving with him, personally, a true copy thereof.

Deponent further says that he knows the said Augustus L. Smith, Herman Erb, Asel W. Patten, and H. D. Smith, so served as aforesaid, to be the identical persons mentioned, named, and described in said citation, writ of error, and bond as defendants in the action.

Deponent further says that on the 26th day of May, 1896, at the hour of twelve o'clock, noon, of that day, at said city of Appleton, he served said annexed citation, writ of error, and bond upon the defendant Charles S. Fairchild by then and there delivering to and leaving with said Augustus L. Smith personally a true copy thereof.

Deponent further says that said Augustus L. Smith, at the time of such service, was then and there the general agent of said Charles S. Fairchild and authorized to accept service for him of the papers so served in this action; that said Charles S. Fairchild is not a resident of this State, but resides in the State of New York, and, as deponent is informed and believes, is temporarily absent from the United States.

FRANK BIERMANN.

Subscribed and sworn to before me this 28th day of May, 1896.

[Seal of Lyman E. Barnes, Notary Public, Outagamie Co., Wis.]

LYMAN E. BARNES,
Notary Public, Outagamie County, Wisconsin.

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

31 Supreme Court of the United States.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY *et al.*, Plaintiffs in Error,
vs.
THE PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Error.

I hereby acknowledge due personal service of a copy of the writ of error, citation, and supersedeas bond in the above-entitled cause upon me this 25th day of May, 1896.

Witness my hand. JAS. H. ELMORE,

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

32 I admit personal service upon me of the annexed citation, also of copy of writ of error and copy of supersedeas bond annexed, this 23d day of May, A. D. 1896.

ALFRED L. CARY,
Attorney for Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Co., G. Lind, Joseph Carlson, The Brokaw Pulp Co., Badger Paper Co., B. Aymar Sands, Joseph Kline, Michael A. Hunt, and Anna Hunt.

DAVID S. ORDWAY,
Attorney for Henry Hewitt, Jr., and W. P. Hewitt and of Counsel for Kaukauna Water Power Co.

WINKLER, FLANDERS, SMITH, BOTTUM & VILAS,
Attorneys for Chicago & Northwestern Railway Company.

HOOPER & HOOPER,
MOSES HOOPER,
Attorney- for Patten Paper Co. (Limited), Union Pulp Co., and Fox River Pulp & Paper Co.

P. R. BARNES,
Per M. H., *Attorney for Reese Pulp Co.*

[Endorsed:] Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

33 The United States of America to the Patten Paper Company (Limited), Union Pulp Company, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, the Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore and Western Railway Company, Greeting:

You are hereby cited and admonished to be and appear at the Supreme Court of the United States, to be holden at Washington, on the seventeenth day of June next, pursuant to a writ of error filed in the clerk's office of the supreme court of the State of Wisconsin, at the office of the clerk of said court, at the city of Madison, in the State of Wisconsin, wherein The Green Bay & Mississippi Canal Company is plaintiff in error and you are defendants in error, to show cause, if any there be, why the final judgment rendered against said plaintiffs in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

In Witness the Honorable John B. Cassoday, chief justice of the supreme court of the State of Wisconsin, this eighteenth day of May, in the year of our Lord one thousand eight hundred and ninety-six.

JOHN B. CASSODAY,
Chief Justice of the Supreme Court of Wisconsin.

[Endorsed:] Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis.

[Endorsed:] In Supreme Court of the United States. Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Company, & others, defendants in error. Cert. citation. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, att'ys for pl'ff in error.

34 STATE OF WISCONSIN, }
Supreme Court. }

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original citation on file in my office in the above-entitled cause, and that it is a correct transcript therefrom and of the whole thereof.

Seal Supreme Court of Wisconsin.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at Madison, the twentieth day of May, A. D. 1896.

CLARENCE KELLOGG,
Clerk of the Supreme Court of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Green Bay & Mississippi Canal Company, plaintiff in error, against Patten Paper Company (Limited), Kaukauna Water Power Company, & others, defendants in error. Certified copy of citation. Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

35 UNITED STATES OF AMERICA, *ss:*

The President of the United States of America to the chief justice and judges of the supreme court of the State of Wisconson, Greeting:

Because in the record and proceedings, as also in the rendition of a final judgment in a plea which is in the supreme court [L. S.] of the State of Wisconsin, the whole record in which plea is before you, being the highest court of law or equity of the State in which a decision could be had in said suit between The Patten Paper Company (Limited), Union Pulp Company, and The Fox River Pulp and Paper Company, plaintiffs and respondents, against The Green Bay and Mississippi Canal Company, defendant and appellant; The Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, Reese Pulp Company, and Milwaukee, Lake Shore & Western Railway Company, defendants and respondents, wherein was drawn in question the validity of a title, right, and privilege claimed by the Green Bay and Mississippi Canal Company under statutes of the United States and under authority exercised under the United States — the decision was against the title, right, and privilege specially set up and claimed by said canal company under said statutes and authority, a manifest error hath happened, to the great damage of the said Green Bay
36 and Mississippi Canal Company, above named, as by its complaint appears, we, being willing that such error, if any hath been, should be duly corrected and full and speedy justice done to the parties aforesaid in this behalf, do command you if judgment be given therein, that then, under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, to-

gether with this writ, so that you have the same at Washington on the seventeenth day of June next, in said Supreme Court, that, the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein to correct that error what of right and according to the laws and customs of the United States should be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the said Supreme Court, this 18th day of May, A. D. 1896, and of the Independence of the United States the 120th.

EDWARD KURTZ, *Clerk.*

Allowed by me—
JOHN B. CASSODAY,
Chief Justice of the Supreme Court of Wisconsin.

This 18th day of May, A. D. 1896.

37 [Endorsed:] Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited) *et al.*, defendants in error. Copy of writ of error. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Ephraim Mariner & Breese J. Stevens, attorneys for pl'ff in error. Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis.

38 Know all men by these presents that the Green Bay and Mississippi Canal Company, principal, and Charles F. Pfister and William Mariner, as sureties, are held and firmly bound unto the Patten Paper Company (Limited), the Union Pulp Company, the Fox River Pulp and Paper Company, the Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, the Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and each of them in the sum of twenty thousand dollars, to be paid to them, the said Patten Paper Company, (Limited), the Union Pulp Company, the Fox River Pulp and Paper Company, the Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, the Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, and each of them, their and each of their successors, executors, administrators, and

assigns; to which payment, well and truly to be made, we bind ourselves, our and each of our successors, heirs, executors, and administrators, firmly by these presents.

Sealed with the seal of the Green Bay and Mississippi Canal Company, and executed by its president and secretary, and sealed with the seals of said sureties, and dated this 18th day of May, 1896.

Whereas the above-named The Green Bay and Mississippi Canal Company hath prosecuted a writ of error to the Supreme Court of the United States to reverse a judgment heretofore rendered in favor of the said obligees against the said obligor in the supreme court of the State of Wisconsin, directed to said court:

39 Now, therefore, the condition of this obligation is such that if the above-named The Green Bay and Mississippi Canal Company shall prosecute its said writ of error to effect and answer all damages and costs if it shall fail to make good its plea, then this obligation shall be void; otherwise the same shall be and remain in full force and virtue.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY,
By E. MARINER, *Pres.*
[CORPORATE SEAL.] AUG. LEDYARD SMITH, *Secretary.*
CHAS. F. PFISTER. [L. S.]
WILLIAM MARINER. [L. S.]

In presence of—
HENRY KESSENICH.
KATHERINE KLUG.

STATE OF WISCONSIN, } ss:
Milwaukee County, }

We, William Mariner and Charles F. Pfister, being duly sworn, each for himself says that he is worth the sum of twenty thousand dollars in property not exempt from execution and over and above all debts and liabilities, and that he is a freeholder and resident of the State of Wisconsin.

CHAS. F. PFISTER.
WILLIAM MARINER.

Subscribed and sworn before me this 18th day of May, 1896.
JOHN W. MARINER,
[NOTARY SEAL.] *Notary Public, Milwaukee Co., Wis.*

I approve of the foregoing bond and of the sufficiency of the sureties therein, and accept the same as good and sufficient security upon the writ of error in the foregoing-entitled cause. Dated May 18th, A. D. 1896.

JOHN B. CASSODSY,
Chief Justice of the Supreme Court of Wisconsin.

40 [Endorsed:] To be returned with proofs of service. Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* Patten Paper Company (Limited), Kaukauna Water Power Com-

pany, & others, defendants in error. Copy of supersedeas bond. Filed May 18, 1896. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 11, 1896. Clarence Kellogg, clerk of supreme court Wis. Mariner.

41 In Supreme Court for the State of Wisconsin.

At certain terms of said court, hereinafter mentioned, begun and held at the capitol, in Madison, the seat of government of said State, on the days hereinafter mentioned, among others, the following proceedings were had:

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and Milwaukee, Lake Shore & Western Railway Company, Defendants,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,

against

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-plaint.

42 Pleas before the supreme court of the State of Wisconsin, at a term thereof begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, the ninth day, of August, A. D. 1887.

Present: Orsamus Cole, chief justice; William P. Lyon, David Taylor, Harlow S. Orton, and John B. Cassoday, justices; Clarence Kellogg, clerk.

Be it remembered that heretofore, to wit, on the eleventh day of April, in the year of our Lord one thousand eight hundred and eighty-seven, came into the office of the clerk of the supreme court of the State of Wisconsin—

First. Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline; and,

Second. Michael A. Hunt and Anna Hunt, and severally filed in said court their respective certain notices of appeal and waivers of undertakings thereon, according to the statute in such case made and provided, and also the return to such appeals of the clerk of the circuit court of Outagamie county, in said State, consisting of so much of the following return as precedes the remittiturs next hereinafter following, in the words and figures following—that is to say:

43 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATHEW J. MEADE, HARRIET S. EDWARDS, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

The State of Wisconsin to the said defendants and each of them:

You are hereby summoned to appear within twenty days after service of this summons, exclusive of the day of service, and defend the above-entitled action in the court aforesaid; and in case of your failure so to do judgment will be rendered against you according to the demand of the complaint, of which a copy is herewith served upon you.

MOSES HOOPER,
Plaintiffs' Attorney.

P. O. address, Oshkosh, Winnebago county, Wis.

44 In the Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokan Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

Plaintiffs complain of defendants for this:

Corporate Character.

1st. That the plaintiffs are corporations created by and existing under the laws of State of Wisconsin.

That the defendants Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, The Green Bay and Mississippi Canal Company, The Kaukauna Paper Company, The American Pulp Company, The Chicago & Northwestern Railway Company, The Brokan Pulp Company, and The Badger Paper Company are corporations created by and existing under the laws of the State of Wisconsin.

Location.

2nd. That the Fox river is a public river. That it flows nearly east, southeast through township No. 21, north of range No. 18 east, of 4th principal meridian in Outagamie county, Wisconsin. That it flows between sections 21 and 22 south of the river, and section 24 and P. Ducharme's private claim No. 1 and Augustin Grignon's private claim No. 35 north of the river.

Flow of River.

3rd. That such Fox river where it passes through such township is of large volume, having a flow of about three hundred thousand cubic feet of water per minute during the ordinary stage of water in same.

Islands.

4th. That where said river passes between said sections 21 and 22 south of river, and section 24 and said private claims north of the river, it is divided into several separate channels by four islands, each of which was surveyed by the United States at time of the Gov-

ernment survey, of said township 21, of range 18, and the contents or area of each of which was returned with the survey and plat of said township to the General Land Office of the United States. That such islands were numbered 1, 2, 3, and 4 in such survey; and were returned as containing, No. 1, six $\frac{72}{100}$ acres of land; No. 2, two and $\frac{2}{100}$ acres of land; No. 3, ten and $\frac{20}{100}$ acres of land, and No. 4 twenty-two and $\frac{53}{100}$ acres of land. That each of said islands was in 1835 sold by the United States as containing said amounts of land, and conveyed by Government patent. That the upper island is No. 4, which is about one hundred and thirty-five rods long with the stream. That this island lays next to the south shore of the river and extends about seventy rods upstream above the head of Island No. 3. That Island No. 3 lies partly between Island No. 4 and the north bank of the river, and is about one hundred and fifteen rods long with the stream, and extends about fifty rods below the foot of Island No. 4. That Island No. 2 lays south of lower end of Island No. 3, and Island No. 1 lays south of Island No. 2 and the foot of Island No. 4, and between that and the south shore.

45 *Divisi-n of Channels.*

That Islands No. 4 and 3 divide the stream into three channels above Islands Nos. 2 and 1, and that Islands Nos. 3, 2 and 1 divide the stream into four channels below Island No. 4.

That below Island No. 4, and over against the lower end of Island No. 3, the river is divided by Islands Nos. 1, 2, and 3 into four channels. That between the south shore and Island No. 1 runs a part of the water of the south channel; and between Islands Nos. 1 and 2 runs part of the water of the south channel and part of the water of the middle channel; and between Islands Nos. 2 and 3 runs part of the water of the middle channel.

Names of Channels.

That these plaintiffs will hereafter in this complaint designate the channel between the south shore and Island No. 4 as the south channel, and the channel between Island No. 4 and Island No. 3 as the middle channel, and the channel between Island No. 3 and the north shore as the north channel.

Volum- of Channels.

5th. That in a state of nature, and before the interruption or diversion of any of the streams into which said river is divided, where it passes said township No. 21, of range 18, the principal part of, and as these plaintiffs are informed and believe, about five-sixths of the flow of said river passed and ran through the channel north of Island No. 4, and about one-sixth thereof through the channel south of said Island No. 4. That at such time, as these plaintiffs are informed and believe, about one-third of the flow of such river

ran and passed through the channel between Islands No. 4 and 3, and about one-half of the flow of such river ran and passed through the channel between Island No. 3 and the north shore of said river.

That no improvements for hydraulic purposes have been made on Islands Nos. 1 and 2, and no attempt has been made to use hydraulic power on either of them.

That these plaintiffs do not know what volume of water passed through the channel between south shore and Island No. 1, or that between Islands Nos. 1 and 2, or that between Islands Nos. 2 and 3, in their natural state, and before any improvements were made in the vicinity to affect such volume. That these plaintiffs do not know whether or not it is practical to make any use of hydraulic power on either Islands Nos. 1 or 2, but that they have made the owners of such islands parties defendant that they might be in court in this action to present any claim they, or either of them, may have as to the amount of water flowing in the south or middle channel of said river.

Impr't of Middle Ch.

6th. That in 1879 and 1880 Mathew J. Meade and N. M. Edwards were owners of Islands Nos. 3 and 4; that while they were such owners they built a dam and made a mill pond between said Island-3 and 4, which dam held and which mill pond received the water of the said middle channel, and which dam raised a head of about fifteen feet, which is called the Meade and Edwards water power.

Patten Paper Co.

7th. That this plaintiff, The Patten Paper Co. (Limited), is the owner of a large and valuable hydraulic power, parcel of said Meade and Edwards' water power, including a flow of about twenty-five thousand cubic feet of water per minute for use for hydraulic power to be drawn from the mill pond held by said Meade and Edwards' dam, and of the undivided half of two mill lots abutting on said Meade and Edwards' dam, to wit: the undivided half of that part of Island No. 3, described in Outagamie county registry of deeds, in volume 48 of Deeds, on page 105, to wit: Commencing at first angle down the stream from the lower waste weir on Kaukauna Island No. 3, Meade and Edwards' water power, thence running south 23 degrees, 40 minutes, east, 362 feet down and along stream to an iron monument, in rock bed, thence north 59 degrees, east, 414 feet down and along stream between island- Nos. 2 and 3, thence to a point (which point is north 59 degrees east, 314 feet from beginning) thence south 59 degrees west, 314 feet to beginning, 3 acres. Also the undivided half of that part of Island No. 4 described in said registry in volume 53 of Deeds, on page 401, to wit: Beginning at a point 10 feet in southwesterly direction from southwesterly corner of the dam across the channel at the foot of Meade and Edwards' water power, situated at Kaukauna Island No. 4, as it exists today, thence in southwesterly direction, parallel with the

retaining wing wall, supporting the bank at the southwest end of the dam to the center of south channel of Fox river, thence westerly by center of said channel to a line which shall be parallel with the first line and 200 feet therefrom, measured on a line at right angles to first-mentioned line, thence north parallel to first-mentioned line to center of bank of said water power, thence by center of said bank to beginning.

8th. That said Patten Paper Co. (Limited), being the owner of said undivided half of said lots and said hydraulic power, leased the north part of the lands described in volume 48, on page 105 of said registry, with a flow of about twenty thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power to the Fox River Pulp and Paper Company on the 12th day of April, 1886, for the term of fifteen years from March 12th, 1883.

46 *Fox R. P. & P. Co.*

That said Fox River Pulp and Paper Company owns a pulp mill standing on said north part of said lot which cost about twenty-five thousand dollars and which it now runs and operates, and to the running and operation of which said flow of twenty thousand cubic feet of water per minute is necessary. That the use of said pulp mill and said water power is worth about eight thousand dollars per year. That said part of lot leased to Fox River Pulp and Paper Company is described in volume 42, Mortgages, page 456, said registry.

Union Pulp Co.

9th. That on or about August 1st, 1881, the Green Bay and Mississippi Canal Company was the owner of the undivided half of north side of Island No. 4 and south side of Island No. 3 and of the Meade and Edwards' water power. That it then made to the Union Pulp Company a lease of the following-described lands, parcel of north side of Island No. 4, to wit: Commencing at the dam at foot Meade and Edwards' power 25 feet southwesterly from an iron pin set in bed rock at foot of stone dam at southwest corner of Kelso lot, thence running southeasterly at right angles with dam to channel between Islands 4 and 1, thence by such channel to east line of land deeded by Meade to Patten 19th April, 1882, in Deeds, volume 53, page 401, thence by said east line of Patten land to stone dam, thence by stone dam to point begins at and also of a constant flow of about twenty thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power for hydraulic power for term of ten years, renewable for one hundred years, which leasehold interest, said Union Pulp Company still holds.

That said Union Pulp Company has erected on said lot and owns a pulp mill worth about forty thousand dollars and now operates same, running same by said water power.

That the said pulp mill cannot be run or operated without the use of said water.

That the use of said mill and said water to run same is worth about fifteen thousand dollars per year.

Kelso Mill.

10th. That George F. Kelso is the owner of a valuable pulp mill situated on said dam between Islands Nos. 3 and 4 and run by water drawn from same. That such mill stands on south part of limits described in volume 48 of Deed-, on page 105 in said registry, and more particularly described as follows: Commencing at hole drilled into bed rock at foot of stone dam or wall on easterly side of same and near to the center of old channel of Fox river between Kaukauna Islands 4 and 3, thence along wall parallel thereto and northerly sixty (60) feet, thence easterly at right angles 150 feet, thence southerly at right angles 60 feet, thence westerly 160 feet to place of beginning, which description appears in volume 42 of Mortgages, on page 244, said registry.

That said Kelso has a lease of such lands and of a constant flow of about one thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power, from the Green Bay and Mississippi Company and the Patten Paper Co. (Limited), as lessors, made while they owned the same, which lease runs fifteen years from August 1st, 1881, and is renewable for one hundred years.

Upp-r Dam.

11th. That a dam has been built across said Fox river about one hundred rods above the head of Island No. 4, and that the defendant, The Kaukauna Water Power Company, has built a wide and deep canal from the mill pond above said dam, along in line with, and south of the south bank of said river to a point below the lower end of Island No. 4. That such canal is large enough to pass, and is intended to pass, the half of the flow of said river. That there are no openings from said canal into the river to return water to the river above the head of Island No. 4, or so that the same can flow into the middle channel of said river and come into said Meade and Edwards' water power. That it is the intention of said Kaukauna Water Power Company to draw from said river above said dam the half of the flow of said river and pass the same through their said canal and through the mills and factories of itself and its lessees into said river, at a point below the head of said Island No. 4, and so that the same shall not and cannot pass into said middle channel, and come into said Meade and Edwards' water power.

Kaukauna Canal.

12th. That said Kaukauna Water Power Company proposes, threatens and intends to carry and pass through its canal from said mill pond, maintained by the dam above said Island No. 4, down below the head of said Island No. 4, through the mills and factories of itself and its lessees, and so that it cannot pass into the said middle

channel or into the said Meade and Edwards' mill pond, the one-half at least of the entire flow of said Fox river, which one-half includes the one-sixth appurtenant to the said south channel, and the one-third thereof appurtenant to the said middle channel, and which should of right flow and come into the mill pond furnishing water to the mills of these plaintiffs. That it, the Kaukauna Water Power Company, has so passed through its canal and the
47 mills and factories of itself and its lessees about one-half of the flow of said stream during the summer of 1886, to the great damage of these plaintiffs, and by so doing has almost entirely prevented the running of the mills of these plaintiffs, The Union Pulp Company and The Fox River Pulp and Paper Company, and that it, the Kaukauna Water Power Company, threatens to, and unless restrained by this court, will so draw and pass said half of said stream, and so deprive these plaintiffs of the use thereof, and of the use of their mills. That such interference by said Kaukauna Water Power Company and its lessees and tenants with the hydraulic rights and water power of these plaintiffs, causes great and constantly occurring damage to these plaintiffs. That such damages are not in their nature susceptible of definite calculation and are constantly varying in amount, because the amount of water drawn wrongfully from said river by said Kaukauna Water Power Company and its lessees and tenants varies at different times, and to keep accurate data relative to same would require the constant attendance of a hydraulic engineer, and because of the uncertainty about the water which may from time to time come to plaintiffs' said mills, makes it uncertain what business may from time to time be done in such mills and what working force may from time to time be needed therein, or, what product may from time to time be manufactured therein.

G. B. & M. Canal.

13. That the Green Bay and Mississippi Canal Company has a canal leading from the said mill pond, maintained by said dam across Fox river above said Island No. 4, along in line with and north of the north bank of said Fox river to a point below the head of said Island No. 3.

That such canal is large enough to pass, and is intended to pass, at least one-half of the flow of said river, and to pass the same down said canal and into said river at a point below the head of Island No. 3, and so that the same cannot run and pass into the said middle channel, and so that the same cannot come into the mill pond formed between said Islands Nos. 4 and 3, by the dam from the one to the other, and, during the past summer, has so passed about half the flow of said stream, so that the same has not and could not come into said mill pond between Islands Nos. 3 and 4, called the Meade and Edwards water power.

14. That the Green Bay and Mississippi Canal Company, and its lessees and tenants are, and have for several years been, and propose to, and will, continue, drawing and passing through their canal on

the north side of said river from the mill pond maintained by the dam above Island No. 4, to a point below the head of Island No. 3, and so that it cannot pass into said middle channel and into the mill pond furnishing water to plaintiffs' mills about one-half of the flow of the Fox river and the half appurtenant to the said north channel.

Navigati-n.

15th. That the United States of America owns and controls said dam above Island No. 4, and the canal on the north side of the river so far as necessary for the maintenance of navigation, and the use of the water of the river for that purpose, and that, subject to such claim and interest, the Green Bay and Mississippi Canal Company owns the same, that is, so far as necessary for the maintenance and use of the same for hydraulic power, subject to the paramount right of and for navigation.

Defend'ts United in Interest with Pl'ff-.

16th. That Mathew J. Meade and the Green Bay and Mississippi Canal Company, Harriet S. Edwards and George F. Kelso are the owners of, or claim some interest in, the flow of water through the said middle channel, and are united in the interest herein with these plaintiffs, but that they refuse to unite with the plaintiffs in this action. That, as these plaintiffs are informed and believe, the said Mathew J. Meade has little or no interest in the said matter, though he claims an interest. That he has conveyed away all his interest and that same has come to the plaintiff, The Patten Paper Company, though that contention is not presented in this action. That as plaintiffs are informed and believe, Harriet S. Edwards is the owner of the undivided quarter part of the flow of said middle channel, subject to the lease to the Union Pulp Company and the lease to Geo. F. Kelso. That the defendant, The Green Bay and Mississippi Canal Company, is the owner of the undivided quarter part of the flow of said middle channel subject to said lease to the Union Pulp Company and to George F. Kelso.

Kaukauna Tenants.

17th. That the defendants, The Milwaukee, Lake Shore and Western Railway Company, James C. Delany, David McCartney, G. Lind, J. Carlson, Joseph Kline, Michael Kline, James H. Elmore, The Badger Paper Company and The Brokaw Pulp Company are tenants under, or are interested in, leases of, the Kaukauna Water Power Company, purporting to give authority to draw and use water from said Kaukauna Water Power Company's canal and as such lessees or tenants they are made parties defendant.

Sands.

18th. That B. Aymar Sands is trustee named in a certain trust mortgage made by said Kaukauna Water Power Company, which

mortgage purports to cover said canal of the Kaukauna Water Power Company and the hydraulic power appurtenant thereto, and to be made available by drawing water from said canal.

48 *Smith & E.*

19th. That Henry D. Smith and Herman Erb are trustees named in a trust mortgage on the lands of the Green Bay and Mississippi Canal Company.

Kelso Mortgag-s.

That Aug. L. Smith and Asel W. Patten are mortgagees named in a mortgage on Geo. F. Kelso's pulp mill and power.

That Margaret J. Kelso and George W. Kelso are mortgagees named in another and second mortgage on George F. Kelso's pulp mill and power.

Fairchild.

That Charles S. Fairchild is mortgagee of Harriet S. Edwards of part of Island No. 4. See volume 50, Mortgages, page 629, said registry.

G. B. & M. Tenants.

20th. That Aug. L. Smith, the Kaukauna Paper Company, the American Pulp Company, Henry Hewitt, Jr., William P. Hewitt, John Jansen, Peter Reuter and Alexander Reuter are tenants under, or are interested in, leases of the Green Bay and Mississippi Canal Company, purporting to give authority to draw and use water from said Green Bay and Mississippi Canal Company's canal, and as such lessees and tenants they are made parties defendant.

Owners of Islands.

21st. That Island No. 1 is owned in undivided shares as follows: One-half by the Kaukauna Water Power Company, one-quarter by the Green Bay and Mississippi Canal Company and one-quarter by Harriet S. Edwards.

22d. That Island No. 2 is owned jointly by M. A. Hunt and Anna Hunt as tenants in common.

23d. That Island No. 3 is owned as follows: The undivided one-quarter thereof by the Green Bay and Mississippi Canal Company, and the undivided one-quarter thereof by Harriet S. Edwards, subject to lease of mill lot to Union Pulp Company, and mill lot to Geo. F. Kelso as above specified. The undivided half thereof by Mathew J. Meade, excepting the parcels thereof owned by Patten Paper Co. (Limited,) above mentioned and described in said registry in volume 48 of Deeds, on page 105, and volume 53 of Deeds, on page 401, and also, excepting parcel thereof described in said registry in volume 47 of Deeds, page 428, hereinafter particularly described as owned by Henry Hewitt, Jr.

That Henry Hewitt, Jr., owns the undivided half of about three acres at upper end and on north side of said Island No. 3, described in said registry in volume 47 of Deeds, page 428, and is as follows: That portion of Island No. 3, lying east of a line, beginning at a cedar tree, agreed upon, near the head of the island, running thence southeasterly to the first cross-channel so as to divide the upper part of Island No. 3, that is above said cross-channel into two equal parts as to area of dry land.

24th. That the land on Island No. 4, bordering the south channel, is owned as follows: One-quarter undivided by the Green Bay and Mississippi Canal Company, one-quarter undivided by Harriet S. Edwards, one-half undivided by the Kaukauna Water Power Company, as far down as the slaughter-house channel, and one-half undivided below the slaughter-house channel by Mathew J. Meade.

25th. That that part of Island No. 4, bordering the middle channel is owned as follows: By Mathew J. Meade one-half except that Patten Paper Co. (Limited), owns of Meade half that part described in vol. 53, Deeds, page 401, of said registry, and the Green Bay and Mississippi Canal Company and Harriet S. Edwards each one-quarter subject to leases of mill lots to Union Pulp Company and to Geo. Kelso, above specified.

Owners of Main Land.

26th. That the land bordering the south side of the south channel from above the head of Island No. 4, to below the head of Island No. 1, is owned by the Kaukauna Water Power Company.

27th. That that part of fractional section 24 bordering on said north channel is owned by the Green Bay and Mississippi Canal Company.

28th. That that part of private claim No. 1, bordering on said north channel, is owned by the Green Bay and Mississippi Canal Company and Henry Hewitt, Jr., and William P. Hewitt, but in just what shares these plaintiffs do not know, such title to part of same being in litigation between said canal company on one side and said Hewitts on the other.

29th. That that part of private claim No. 35, bordering on said north channel, is owned by the Chicago and Northwestern Railway Company.

30th. That the parties above named are owners of all the lands bordering the north and south shores of said river from the head of the upper Island No. 4, to the foot of the lower Island No. 1, and also of the shores of all said islands.

49 31st. That the above-named tenants of the various owners are all the tenants of all of such owners.

32d. That all parties interested in the amount of water appurtenant to the south, middle and north channels of said Fox river where same passes Islands Nos. 3 and 4, are named herein as plaintiffs or defendants.

Prayer for Judgment.

Wherefore these plaintiffs pray judgment of this court.

First. Determining and adjudicating what share or proportion of the flow of said Fox river where same passes Islands Nos. 3 and 4, in township No. 21, north of range No. 18, east, is appurtenart and of right should be permitted to flow in the south, middle and north channels of said river respectively..

Second. Restraining the defendant, The Kaukauna Water Power Company, and all persons and corporations claiming under it as mortgagees, lessees, purchasers or otherwise, and especially all such as are named defendant herein, from drawing from said Fox river above the head of Island No. 4, and passing around and below the head of said Island No. 4, and so that same shall not come into the middle channel of said river and into the mill pond of these plaintiffs, called the Meade and Edwards water power, more water, flow of said river, than the one-sixth part thereof, or more than the amount which by nature was appurtenant to and flowed in said south channel of said river.

Third. That Kaukauna Water Power Company pay to these plaintiffs costs of this action.

MOSES HOOPER,
Plaintiffs' Attorney.

50 [Endorsed:] State of Wisconsin. Circuit court, Outagamie county. Patten Paper Company (Limited) and Union Pulp Company and Fox River Pulp and Paper Co., plaintiffs, *vs.* Kaukauna Water Power Company *et al.*, defendants. Complaint. Moses Hooper, plaintiffs' attorney. Circuit court, Outagamie county. Filed Nov. 3, 1886. F. C. Friederichs, clerk. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

51 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

—

KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.

The following-named defendants in the above action, to wit, Kaukauna Water Power Company, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline, by Alfred L. Cary, their attorney, demur to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because said complaint does not state facts sufficient to constitute a cause of action against them.

2nd. Because it appears upon the face of said complaint that the

court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Numbers Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

ALFRED L. CARY,
Attorney for said Defendants.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs, against Kaukauna Water Power
52 Company *et al.*, defendants. Demurrer of The Kaukauna Water Power Company and part of the other defendants. A. L. Cary, att'y for said within-named defendants. Copy of above demurrer rec'd Dec. 30th, 1886. Moses Hooper, pl'ffs' att'y. Circuit court, Outagamie county. Filed Jan. 3, 1887. F. C. Friedrich, cl-rk. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis.

53 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.

The joint demurrer of The Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline, defendants in the above action, to the complaint of said plaintiffs in the above action having been argued before this court at the February term thereof, A. D. 1887, and time having been taken for consideration, and the court being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendants are given leave to answer the complaint within twenty days from this date on payment of ten dollars costs of demurrer to the plaintiffs.

Dated March 10th, 1887.

By the court: GEO. H. MYERS, *Judge.*

Endorsement: J. B., vol. 8, 351. Circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of the def'ts, Kaukauna Water Power Company, Mil., L. S. & W. R'y Co., *et al.*, to the complaint. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

54 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY
against
KAUKAUNA WATER POWER COMPANY, MILWAUKEE, LAKE SHORE & WESTERN RAILWAY COMPANY, G. LIND, JOSEPH CARLSON, BROKAW PULP COMPANY, BADGER PAPER COMPANY, and JOSEPH KLEIN, Impleaded with Others.

To Moses Hooper, Esq., plaintiffs' attorney, & F. C. Friedrichs, Esq., clerk of said court:

Please take notice that the above-named defendants, Kaukauna Water Power Company, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Klein, appeal to the supreme court of the State of Wisconsin from the order entered by the court in the above-entitled action on the 10th day of March, 1887, overruling the demurrer of said defendants to the plaintiffs' complaint in said action, and that said appeal is from the whole of said order.

Dated March 21st, 1887.

Yours, etc.,

ALFRED L. CARY,
Attorney for said Defendants.

I hereby admit service of the foregoing notice this 4th of April, 1887, and hereby waive any undertaking on said appeal and the deposit with the clerk of said court of any money in lieu of such undertaking.

MOSES HOOPER,
Plaintiffs' Attorney.

Endorsement: Circuit court, Outagamie county. Patten Paper Co., Limited, *et al. vs.* Kaukauna Water Power Co. *et al.* Notice of appeal. Alfred L. Cary, attorney for the defendants who appeal. Service admitted this 6th day of April, 1887. F. C. Friedrichs, clerk. Circuit court, Outagamie county. Filed Apr. 6, 1887. F. C. Friedrichs, clerk. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

55 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MICHAEL A. HUNT, ANNA HUNT, *et al.*, Defendants.

The said defendants, Michael A. Hunt and Anna Hunt, demur to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against them.

2nd. Because it appears upon the face of said complaint that the court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Number- Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

ALFRED L. CARY,
Attorney for said Defendants.

Copy of above demurrer received Dec. 31, 1886.

MOSES HOOPER,
Plaintiffs' Att'y.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, & Fox River Pulp and Paper Company, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Demurrer to complaint of defend-
56 ants Michael A. Hunt & Anna Hunt. Alfred L. Cary, att'y for said defendants. Filed Jan. 3, 1887. Circuit court, Outagamie county. F. C. Friedrichs, clerk. Filed April, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

57 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.

The joint demurrer of said defendants, Michael A. Hunt and Anna Hunt, to the complaint of said plaintiff in the above action having been argued by counsel for the respective parties before this court at the February term thereof, A. D. 1887—

And the court having taken time for consideration and being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendants are given leave to answer the complaint within twenty days from this date on payment to the plaintiffs of ten dollars costs of the demurrer.

Dated March 10th, 1887.

By the court:

F. C. FRIEDRICHS, *Clerk.*

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of the

def'ts Michael A. Hunt & Anna Hunt to plaintiffs' complaint. Filed Mar. 10, 1887. Circuit court, Outagamie county. F. C. Friedrichs, clerk. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

58 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY
against
MICHAEL A. HUNT and ANNA HUNT, Impleaded with Others.

To Moses Hooper, Esq., plaintiffs' attorney, & F. C. Friedrichs, Esq., clerk of said court:

Please take notice that the above-named defendants, Michael A. Hunt and Anna Hunt, appeal to the supreme court of the State of Wisconsin from the order entered by the court in the above-entitled action on the 10th day of March, 1887, overruling the demurrer of said defendants to the plaintiffs' complaint in said action, and that said appeal is from the whole of said order.

Dated March 21st, 1887.

Yours, etc.,

ALFRED L. CARY,
Attorney for said Defendants.

I hereby admit service of the foregoing notice this 4th day of April, 1887, and hereby waive any undertaking on said appeal and the deposit with the clerk of said court of any money in lieu of such undertaking.

MOSES HOOPER,
Plaintiffs' Attorney.

Endorsement: Circuit court, Outagamie county. Patten Paper Co., Limited, *et al. vs.* Michael A. Hunt & Anna Hunt, impleaded with others. Notice of appeal from order overruling demurrer to original complaint. Alfred L. Cary, attorney for defendants
59 Michael A. and Anna Hunt. Service admitted this 6th day of April, 1887. F. C. Friedrichs, clerk. Filed Apr- 6, 1887. Circuit court, Outagamie county. F. C. Friedrichs, clerk. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

60 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
THE KAUKAUNA WATER POWER CO., MICHAEL HUNT, and ANNA HUNT *et al.*

I, F. C. Friedrichs, clerk of the circuit court in and for said county, do hereby certify that the annexed and foregoing are the original orders and all the original papers used by each party on the appli-

cation for the orders appealed from, together with the notices of appeal, and the same are hereby transmitted to the clerk of the supreme court of Wisconsin pursuant to the annexed notice of appeal and the direction of the attorneys for the defendants so appealing.

In testimony whereof I have hereunto set my hand and affixed the seal of said court this 8th day of April, A. D. 1887.

[SEAL.] F. C. FRIEDRICHS, *Clerk.*

Endorsement: Patten Paper Co. (Limited) *et al.* against The Kaukauna Water Power Company *et al.* Appeal. Filed Apr. 11, '87. Clarence Kellogg, clerk sup. ct. Wis. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

61 And afterwards, to wit, on the 13th day of December, A. D. 1887, the same being the forty-fourth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

PATTEN PAPER COMPANY (LIMITED), Union Pulp Company, and Fox River Pulp and Paper Company, Respondents, *vs.* KAUKAUNA WATER POWER COMPANY, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline, Impleaded, etc., Appellants.	Appeal from Circuit Court of Outagamie County, Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on consideration thereof it is now here ordered and adjudged by this court that the order of the circuit court of Outagamie county overruling the demurrer to the complaint herein be, and the same is hereby, affirmed with costs against the said appellants, taxed at the sum of eighty-eight and fifty one-hundredths (88.50) dollars.

62 And afterwards, to wit, on the 13th day of December, A. D. 1887, the same being the forty-fourth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

PATTEN PAPER COMPANY (LIMITED), Union Pulp Company, and Fox River Pulp and Paper Company, Respondents,
vs.
MICHAEL A. HUNT and ANNA HUNT, Impleaded, etc., Appellants.
} Appeal from Circuit Court, Outagamie County, Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the order of the circuit court of Outagamie county overruling the demurrer to the complaint herein be, and the same is hereby, affirmed with costs against the appellants, taxed at the sum of seventy-one and twenty-five one-hundredths (71.25) dollars.

63 Upon announcing the foregoing decisions the court, by Taylor, justice, rendered its opinion in the words and figures following—that is to say:

64 PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and Fox River Pulp and Paper Company, Respondents,
vs.
KAUKAUNA WATER POWER COMPANY, MILWAUKEE, LAKE SHORE and Western Railway Company, Michael Hunt and Anna Hunt, and Others, Appellants.

This action was brought by the respondents for the purpose of settling their rights in and to a certain water power on the Fox river and to restrain some of the appellants from diverting the water of said river from their said power. The material facts alleged in the complaint are the following, viz: That the Fox river is a public river, and at the place in question flows in nearly an easterly course through township No. 21 north of range 18 east of the 4th principal meridian, in Outagamie county, Wisconsin, and between sections 21 and 22 south of the river and section 24 and private claims Nos. 1 and 35 north of the river; that the volume of water which naturally flows in the river at that place is about 300,000 cubic feet per minute in the ordinary stage of water; that where the river flows between sections 21 and 22 and sections 24 and said private claims it is divided into several separate channels by four islands, numbered 1, 2, 3, 4; that said islands were surveyed by the United States Government and sold as other public lands to private persons; that Island No. 1 contains 6.72 acres; No. 2 contains 2.02 acres; No. 3, 10.20 acres, and No. 4, 22.53 acres; that Island No. 4 is about 135 rods long with the stream and lays next the south shore of the river and extends about 70 rods upstream above the head of Island No. 3; that Island No. 3 lays partly between
65 Island No. 4 and the north bank of the river, is about 115 rods long with the stream, and extends about 50 rods below the foot of Island No. 4; that Island No. 2 lays south of the lower end of No. 3, and Island No. 1 lays south of Island No. 2 and the foot

of Island No. 4 and between the foot of said Island 4 and the south shore; that Islands Nos. 3 and 4 divide the stream into three channels above Islands Nos. 3, 2, and 1, and Islands Nos. 3, 2, and 1 divide the stream into four channels below Island No. 4; that between the south shore of Island No. 1 runs a part of the water of the south channel, and between Islands Nos. 1 and 2 runs part of the water of the south channel and a part of the water of the middle channel, and between Islands Nos. 2 and 3 runs part of the water of the middle channel. In the complaint the channel between the south shore and Island No. 4 is designated as the south channel, the channel between Island No. 4 and Island No. 3 as the middle channel, and the channel between Island No. 3 and the north shore as the north channel.

The complaint then alleges that in a state of nature and before there was any interruption or diversion of the waters of the stream about five-sixths of the water of the stream flowed through the channel north of Island No. 4 and about one-sixth through the channel south of said island; that about one-third of the waters of the river ran and passed through the channel between Islands Nos. 4 and 3 and about one-half of the water of the river flowed through the channel north of said Island No. 3 and the north shore of the river; that no improvements for hydraulic purposes have been made on Islands Nos. 1 and 2, and that the plaintiffs do not know what volume of water passes between the south shore and island No. 1 or between Islands 1 and 2 or between Islands 2 and 3 in their natural state, and the plaintiffs allege that they do not know whether it is practical or not to make any use of hydraulic power on either of the Islands Nos. 1 or 2, and that they have made the owners of these islands parties to this action that they might be in court to present any claim they or either of them may have as to the amount of water flowing in the south or middle channel of said river.

66

The plaintiffs then allege that in 1879 and 1880 Mathew Mead and M. J. Edwards were the owners of Islands Nos. 4 and 3, and that they then built a dam and made a mill pond between Islands Nos. 4 and 3, which mill pond received the water of the said middle channel and raised a head of about fifteen feet, which is called the Mead and Edwards water power. They then allege that the Patten Paper Company acquired from said Mead and Edwards the right to use 25,000 cubic feet per minute from the hydraulic power created by said dam and pond, and have constructed very valuable mills and works for the use of said power, particularly describing the property owned by said company. They also allege the ownership of a part of said hydraulic power created by said dam and pond by the Fox River Pulp and Paper Company, and that said Fox River Pulp and Paper Company have erected very expensive and valuable buildings and works for the purpose of using such hydraulic power. The property of this company is also particularly described in the complaint. They also allege that in 1881 the Green Bay and Mississippi Canal Company was the owner of the undivided half of the north side of Island No. 4 and the south side of

Island No. 3 and of the Mead and Edwards water power, and that said company leased certain described lands on Island No. 4 to the Union Pulp Company, together with 20,000 cubic feet of water per minute to be drawn from the said Mead and Edwards water power for hydraulic purposes for the term of ten years, with right of renewal for one hundred years, which said lease is still owned by said company, and that they have erected a large and valuable mill in which to use such hydraulic power. They also allege the ownership by George F. Kelso of a part of the said Mead
67 and Edwards water power, particularly describing the same.

The plaintiffs then allege that a dam has been built across the said Fox river about one hundred rods above the head of Island No. 4, "and the defendant The Kaukauna Water Power Company has built a wide and deep canal from the mill pond above said dam along in a line north and south of the south bank of said river to a point below the lower end of Island No. 4; that such canal is large enough to pass and is intended to pass the half of the flow of said river; that there are no openings from said canal into the river to return water to the river above the head of Island No. 4 or so that the same can flow into the middle channel of said river and come into said Mead and Edwards' water power; that it is the intention of the said Kaukauna Water Power Company to draw from said river above said dam the half of the water flowing in said river and pass the same through their said canal and through the mills and factories of itself and its lessees into said river at a point below the head of Island No. 4 and so that the same shall not and cannot pass into said middle channel and down into said Mead and Edwards' water power."

That said Kaukauna Water Power Company proposes, threatens, and intends to carry and pass through its canal from said mill pond maintained by the dam above said Island No. 4 down below the head of said Island No. 4, through the mills and factories of itself and its lessees, and so that it cannot pass into the said middle channel or into the said Mead and Edwards mill pond the one-half at least of the entire flow of said Fox river, which one-half includes the one-sixth appurtenant to the said south channel and the one-third thereof appurtenant to the said middle channel, and which should of right flow and come into the mill pond furnishing water to the mills of these plaintiffs; that it, the Kaukauna Water Power Company, has so passed through its canal and
68 the mills and factories of itself and its lessees about one-half of the flow of said stream during the summer of 1886, to the great damage of these plaintiffs, and by so doing has almost entirely prevented the running of the mills of these plaintiffs, The Union Pulp Company and The Fox River Pulp and Paper Company, and that it, the Kaukauna Water Power Company, threatens to and, unless restrained by this court, will so draw and pass said half of said stream and so deprive these plaintiffs of the use thereof and of the use of their mills; that such interference by said Kaukauna Water Power Company and its lessees and tenants with the hydraulic rights and water power of these plaintiffs causes great

and constantly occurring damage to these plaintiffs; that such damages are not in their nature susceptible of definite calculation and are constantly varying in amount, because the amount of water drawn wrongfully from said river by said Kaukauna Water Power Company and its lessees and tenants varies at different times, and to keep accurate data relative to the same would require the constant attendance of a hydraulic engineer, and because of the uncertainty about the water which may from time to time come to plaintiffs' said mills makes it uncertain what business may from time to time be done in such mills and what working force may from time to time be needed therein or what product may from time to time be manufactured therein.

13th. That the Green Bay and Mississippi Canal Company has a canal leading from the said mill pond maintained by said dam across Fox river above said Island No. 4 along in line with and north of the north bank of said Fox river to a point below the head of said Island No. 3.

That such canal is large enough to pass and is intended to pass at least one-half of the flow of said river and to pass the same down said canal and into said river at a point below the head of Island No. 3 and so that the same cannot run and pass into the
69 said middle channel and so that the same cannot come into the mill pond formed between said Islands Nos. 4 and 3 by the dam from one to the other, and during the past summer has so passed about half the flow of said stream, so that the same has not and could not come into said mill pond between Islands Nos. 3 and 4, called the Mead and Edwards water power.

14th. That the Green Bay and Mississippi Canal Company and its lessees and tenants are and have for several years been and propose to and will continue drawing and passing through their canal on the north side of said river from the mill pond maintained by the dam above Island No. 4 to a point below the head of Island No. 3 and so that it cannot pass into said middle channel and into the mill pond furnishing water to plaintiffs' mills about one-half of the flow of the Fox river and the half appurtenant to the said north channel.

The complaint then alleges that the persons named as defendants in this action are the riparian owners of the south and north shores of said river opposite the islands named and below said dam or of the shores of said islands or of some part thereof, or that they have some interest therein as mortgagees, lessees, or otherwise, stating at length the character and nature of such ownership, or that they have some interest in the water power created by said dam or in the Mead and Edwards water power, in the Kaukauna water power, or in the Green Bay and Mississippi Canal Company's water power. Then follows the general allegations "that the parties above named are the owners of all the lands bordering the north and south shores of said river from the head of the upper island, No. 4, to the foot of the lower island, No. 1; also of the shores of all of said islands."

"That the above-named tenants of the various owners are all the tenants of all said owners," and "that all the parties interested in

the amount of water appurtenant to the south, middle, and
70 north channels of said Fox river where the same passes Islands Nos. 3 and 4 are named as plaintiffs or defendants."

The complaint concludes with the following prayer for judgment:

First. Determining and adjudicating what share or portion of the flow of said Fox river where the same passes Islands Nos. 3 and 4, in township No. 21 north of range No. 18 east, is appurtenant and of right should be permitted to flow in the south, middle, and north channels of said river respectively.

Second. Restraining the defendant The Kaukauna Water Power Company and all persons and corporations claiming under it as mortgagees, lessees, purchasers, or otherwise, and especially all such as are named defendant herein, from drawing from said Fox river above the head of Island No. 4 and passing around and below the head of said Island No. 4 and so that the same shall not come into the middle channel of said river and into the mill pond of these plaintiffs, called the Mead and Edwards water power, more water flow of said river than the one-sixth part thereof or more than the amount which by nature was appurtenant to and flowed in said south channel of said river.

Third. That Kaukauna Water Power Company pay to these plaintiffs costs of this action."

To this complaint the defendants Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline, by their attorney, Alfred L. Cary, demur and assign for causes of demurrer, " 1, that the complaint does not state facts sufficient to constitute a cause of action against them; 2, because it appears on the face of the complaint that the court has no jurisdiction of the subject-matter of the complaint; 3, because it appears upon the face of the complaint that several causes of action have been improperly united."

71 Michael H. Hunt and Anna Hunt demur separately and assign the same causes of demurrer. The demurrers were each overruled by the circuit court, and from the order overruling the same separate appeals were taken to this court.

We do not understand that the learned counsel for the appellants have very seriously contended that their demurrers should be sustained upon the second ground alleged, but have contented themselves with an endeavor to show on the part of the Kaukauna Water Power Company and those joining with them in the demurrer that the court erred in not sustaining their demurrer on the ground that several causes of action have been improperly united, and on the part of the Hunts that no cause of action is stated against them, and that several causes of action have been improperly united.

As some argument has been made in the briefs of counsel questioning the power of a court to exercise its equity powers for the purpose of regulating, determining, and apportioning the respective rights of parties in the same water power or in apportioning and regulating the use of the water of a river for hydraulic purposes by the several riparian owners adjacent to and to whose lands such

hydraulic power is appurtenant, in whole or in part, we call attention to the following cases in which that power has been exercised by a court of equity with the approval of the most learned courts of this country, and we find no cases holding the contrary doctrine, and none have been cited by the very careful and learned attorneys for the appellants on the hearing of these appeals: Arthur *v.* Case, 1 Paige, 447; Belknap *v.* Trimble, 3 Paige, 577; Gardner *v.* Newburgh, 2 John. Ch., 165; Olmsted *v.* Loomis, 9 N. Y., 423; 2 Story's Equity Jurisprudence, 12th ed., secs. 927 *et seq.*; Fisk *v.* Wilber, 7 Barb., 395; Burden *v.* Stein, 27 Ala., 104; —— Water Co. *v.* Chipman, 8 Cal., 392; Tollett *v.* Long, 58 Barb., 20; Bronihan *v.* Kempton,
72 44 N. H., 78; Raulet *v.* Cook, 44 N. H., 512; Bardwell *v.* Annis, 22 Pick., 353; Bemis *v.* Upham, 13 Pick., 171; Ballou *v.* Hopkinston, 4 Gray, 324; Lyon *v.* McLaughlin, 32 A., 423; Webb *v.* The Portland Manufacturing Co., 3 Sumn., 189; Wright *v.* Howard, 1 Sim. and Stu. R., 190; Mann *v.* Hill, 3 Barn. and Adolph. R., 304; Pomroy's Remedies and Remedial Rights, sections 418–422; Frey *v.* Lowden, 11 Pacific Rep., 838; Janesville Cotton Mill Co. *v.* Ford, 55 Wis., 199; Lawson *v.* Menasha Wooden Ware Co., 59 Wis., 397, 398; Allard *v.* Carlton (N. H.), 3 Atl. Rep., 313. These cases and numerous others clearly sustain the courts in the exercise of their equity powers in adjusting and protecting the rights of parties interested in hydraulic powers. One reason for the interference of a court of equity in such cases is perhaps as well expressed in the case of Lyon *v.* McLaughlin, *supra*, as any other. The court in that case say: "The uncertainty of the extent of the prospective injury and the impossibility of ascertaining the measure of just reparation render such injury irreparable, in a legal sense, and therefore a court of equity will entertain jurisdiction of such a bill and grant the proper remedy, notwithstanding the respective rights of the parties to the use of the water are in dispute and depend entirely on the legal construction of their deeds." In the case of Belknap *v.* Trimble, *supra*, it was held that "Where different mill-owners have a common right to an artificial use of water for their respective mills, the court of chancery has jurisdiction so to regulate the common use as to preserve the rights of each." In Frey *v.* Lowden, *supra*, the court say there is no doubt of the power of a court of equity to ascertain and determine the extent of the rights of property in water flowing in a natural water-course, acquired by persons who hold and are entitled to them, and to regulate between or among them the use of the flow of the water in such a way as to maintain equality of rights in the enjoyment of the com-
73 mon property, but it is unnecessary to cite further cases in support of the equity powers of the courts in such cases.

The mere statement of the case as made in the complaint in this action shows the absolute necessity of the exercise of such a power by the courts, in order to protect the rights of the plaintiffs as well as the rights of all others interested in the use of the hydraulic power created by the fall of the water of the river at the place mentioned.

There is no question in this case as to the unsettled and unascer-

tained rights of the respective parties, and the case does not come within the rule laid down in some of the cases that when the plaintiff's right is disputed and not clear he must first have his right settled in an action at law.

The defendants having demurred to the complaint, all the material facts alleged are admitted for the purpose of the decision upon such demurrer. It is admitted, therefore, that in its natural state the water of said river would flow in the south, middle, and north channels, as stated in such complaint, and it is further admitted that the defendant The Kaukauna Water Power Company has turned the water which was accustomed to run to the plaintiffs' dam and pond on the middle channel away from such channel, and that it threatens in the future to continue such diversion of the water, to the destruction of the rights of the plaintiff in the water power created by the Mead and Edwards dam and pond and upon which the beneficial use of their machinery and mills depend, so that as against the Kaukauna Water Power Company and their grantees and lessees there is certainly a clear cause of action stated in the complaint. It is urged as one ground of demurrer that the complaint also states a separate cause of action against the Green Bay and Mississippi Canal Company, and for that reason the com-
74 plaint is subject to the objection that several causes of action are improperly joined. We think this contention is not sustained by the facts stated. The complaint does not state that the diversion of the water from the north channel by the canal company into their canal has taken any of the water from the river which was accustomed to run through the middle channel. The allegations in the complaint, so far as they regard the canal company, would not, if proved, entitle the plaintiff to any damages or relief against said company. We think the demurrer cannot be sustained upon that ground by either of the defendants.

The only other question is whether the Hunts were properly made parties to the action. If the only relief sought was to restrain the Kaukauna Water Power Company from diverting the water from the middle channel in the future, it might be said that there was no reason for making the Hunts or any others except the Kaukauna Co. and those claiming under them parties to the action. But that is not the only or the principal relief asked. In addition to the relief claimed against the Kaukauna Water Power Company and those claiming under them, this court is asked to settle and determine what share or portion of the flow of the water of said river where the same passes Islands 3 and 4, in township No. 21 north of range 18 east, is appurtenant and of right should flow in the south, middle, and north channel of said river respectively.

If the complaint state facts which entitle the plaintiff to this relief, and that it does is shown by the cases above cited, then it is evident that in order to settle the rights of the respective owners of the water rights in said channels all persons interested in the water rights in said channels or in either of them are proper parties to the action. If it be urged that the plaintiffs are only interested in

having it settled as to what volume of water should of right
75 flow in the middle channel, the answer to that proposition is that the settlement of that right will necessarily affect the rights of the owners of the water power in the other channels. The individual rights are so connected that one cannot be settled without affecting all the others. It is urged, however, that if all the persons having any interest in the flow of the water of the river in the south, middle, and north channels are interested in the settlement of the questions sought to be adjudicated in this case, and so are proper parties in an equity proceeding for that purpose, and are proper parties under the provisions of section 2603 R. S., that it is not apparent on the facts stated in the complaint how the Hunts, who own Island No. 2 only, and which is below Islands 3 and 4, which form the three channels in which the flow of the water of the river is sought to be apportioned and determined, have any interest in settling that question. It is true the complaint does not expressly allege that the Hunts have any interest in the matters to be determined in this action, nor that they claim any such interest, but it alleges facts showing that under certain circumstances they might have an interest—that is, the complaint shows that Island No. 2 is so situated with regard to the flow of the waters through the south and middle channels that the owners might be interested in the water flowing through such channels if the flow through such channels can be utilized for hydraulic power on the shores of said island, and upon that point the plaintiffs allege they have no knowledge. If the owners of this island can utilize the flow of the water for hydraulic purposes on the shores of said Island, then it is quite apparent that they may be interested in having it flow in greater volume through one or the other of these channels, depending upon the facility with which hydraulic powers can be created on one or the other of the shores of said island. As upon the face of the complaint the Hunts may have an interest in the
76 questions to be determined in the case, we think they may be properly made parties to the action under the section of the statute above quoted. If they are, in fact, indifferent or have no interest in the matter, they can disclaim any such interest and may upon such disclaimer be dismissed therefrom. If they have any interest, they can set it forth and have it protected, and so have an end of litigation. The effect of the allegations in the complaint as to Island No. 2 and its ownership by the Hunts is that the Hunts may have an interest in the question to be litigated, although the nature of such interest is not known by the plaintiffs, and they are asked to come into court and disclose their interest or disclaim having any interest in the controversy, so that they cannot hereafter disturb the settlement of the rights of the parties as determined by the judgment in this action. We think they were properly made parties defendants. Wilson *v.* Castro, 31 Cal., 420.

The order of the circuit court overruling the several demurrers of the appellants *are* affirmed, and the cause is remanded for further proceedings.

(Endorsements:) (153 & 154.) August term, 1887. Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company, respondents, *vs.* Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, Michael Hunt and Anna Hunt, and others, appellants. Opinion by Taylor, J. Filed Dec. 13, 1887. Clarence Kellogg, clerk sup. ct. Wis.

77 Thereupon this court issued its remittiturs to the court below in the words and figures following:

78 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the ninth day, of August, A. D. 1887, on the forty-fourth day of the term, to wit, on the 13th day of December, A. D. 1887—present, Orsamus Cole, chief justice, and William P. Lyon, Harlow S. Orton, David Taylor, and J. B. Cassoday, associate justices of said court—the following proceedings were had, *inter alia*, to wit:

PATTEN PAPER COMPANY (LIMITED), UNION Pulp Company, and Fox River Pulp and Paper Company, Respondents, *vs.* KAUKAUNA WATER POWER COMPANY, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, and Joseph Kline, Impl'd, &c., Appellants.	Appeal from Circuit Court, Outagamie County, State of Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the order of the circuit court of Outagamie county overruling the demurrer to the complaint herein be, and the same is hereby, affirmed with costs against the said appellants, taxed at the sum of eighty-eight & $\frac{50}{100}$ ($88.50) dollars.

And that this cause be, and the same is hereby, remanded to the said circuit court for such further proceedings therein as may be according to law.

STATE OF WISCONSIN, } ss:
Supreme Court, }

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom.

[L. S.] In testimony whereof I have hereunto set my hand and affixed the seal of said court, at Madison, this 13th day of December, A. D. 1887.

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Patten Paper Co. *et al.*, resp'ts, against Kaukauna Water Power Co. *et al.*, app'l'ts. Remittitur. Circuit court, Outagamie county. Filed Mar. 14, 1888. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

79 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the ninth day, of August, A. D. 1887, on the forty-fourth day of the term, to wit, on the 13th day of December, A. D. 1887—present, Orsamus Cole, chief justice, and William P. Lyon, Harlow S. Orton, David Taylor, and J. B. Cassoday, associate justices of said court—the following proceedings were had, *inter alia*, to wit:

PATTEN PAPER COMPANY (LIMITED), UNION Pulp Company, and Fox River Pulp & Paper Company, Respondents, *vs.* MICHAEL A. HUNT and ANNA HUNT, Impl'd, &c., Appellants.	Appeal from Circuit Court, Outagamie County, State of Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the order of the circuit court of Outagamie county overruling the demurrer to the complaint herein be, and the same is hereby, affirmed with costs against the appellants, taxed at the sum of seventy-one and $\frac{25}{100}$ ($71.25) dollars.

And that this cause be, and the same is hereby, remanded to the said circuit court for such further proceedings therein as may be according to law.

STATE OF WISCONSIN, } ss:
Supreme Court, }

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at Madison, this 13th day of December, A. D. 1887. [L. S.]

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Patten Paper Co. *et al.*, resp'd't-, against M. A. Hunt *et al.*, app'l'ts. Remittitur. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

80 Thereupon the following further proceedings were had in this same cause and in this same court:

Pleas before the supreme court of the State of Wisconsin, at a term thereof begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, the 13th day, of January, A. D. 1891.

Present: Orsamus Cole, chief justice; William P. Lyon, David Taylor, Harlow S. Orton, and John B. Cassoday, justices; Clarence Kellogg, clerk.

Be it remembered that heretofore, to wit, on the fifth day of December, in the year of our Lord one thousand eight hundred and ninety, came into the office of the clerk of the supreme court of the State of Wisconsin the Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt and filed in said court their certain notice of appeal and waiver of undertaking, according to the statute in such case made and provided, and also the return to such appeal of the clerk of the circuit court of Outagamie county, in said State (consisting of the following papers, up to and including the remittitur next hereinafter appearing), in the words and figures following—that is to say:

81 In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Impleaded with Others, Defendants.

The Green Bay and Mississippi Canal Company, one of the defendants named in the above entitled action, for answer to the plaintiffs' complaint in said action says:

I.

It admits the allegations of paragraphs 1, 2, 3, 4, and 5 of the complaint, excepting that it has no knowledge or information sufficient to form a belief as to the allegation of paragraph 5 giving the proportion of water passing through the channel between Islands Nos. 4 and 3 and Island No. 3 and the north shore.

It admits paragraph 6 of the complaint, excepting that it does

not have any knowledge or information thereof sufficient to form a belief as to the head of water raised by the dam mentioned nor as to whether at the time mentioned Meade and Edwards were the owners of the islands mentioned.

It does not have any knowledge or information sufficient to form a belief as to the allegations of the 7th and 8th paragraphs.

It admits the allegations of paragraph 9 of the complaint, excepting that — does not have any knowledge or information
82 sufficient to form a belief as to the worth of the pulp mill, whether it can be run or operated without the use of water, nor whether it is worth fifteen thousand dollars per year, as stated.

Upon information and belief it admits the allegations in paragr-phs 11 and 12 and admits the allegations of paragraphs 13, 14, and 15, excepting that the pond, described in part as a canal in paragraph 13, extends down to a point below the head of Island No. 3 and a large part of the way in the original bed of said Fox river, and, so qualified, admits the allegations made, excepting that this defendant, its lessees and tenants, not only propose to continue drawing and passing through said extended pond or canal, as it is called in the complaint, not only the one-half of the flow of the river and called the half appurtenant to the said north channel, but the entire flow of the water of the river if need be.

It admits the allegations of paragraph 16, excepting that it claims a paramount right to the use, if need be, of all of the water power created by the pond above the Government dam, so-called, on the north side if it shall so elect.

It does not have any knowledge or information sufficient to form a belief as to the allegations in paragraphs 17th, 18th, and 19th, excepting that it admits that Smith and Edwards are trustees in the trust mortgage mentioned.

Upon information and belief it admits the allegations of paragraphs 20th and 21st.

It does not have any knowledge or information sufficient to — a belief as to the allegations in paragraphs 22nd and 23rd, excepting that it admits that this defendant is interested in Island No. 3, as therein stated.

It does not have any knowledge or information sufficient to form a belief as to the allegations of paragraphs 24th, 25th, and 26,
83 excepting that it admits that the defendant here answering is the owner of and interested in Island No. 4, as therein stated.

It admits the allegations of paragraphs 27th and 28th, 29th, and 30th, excepting that it does not know that the Chicago and Northwestern Railway Company is the owner, as therein stated, and it does not have any knowledge or information sufficient to form a belief as to the allegations stated in paragraphs 31st and 32nd.

II.

And the defendant here answering, for a further and separate defense in bar to the plaintiffs' cause of action and by way of counter-claim thereto, further shows to the court and says:

II.

That the Fox river is a navigable stream and flows downward nearly northeasterly through township number twenty-one (21) north of range eighteen (18) east, in the county of Outagamie, Wisconsin, flowing or passing between sections twenty-one (21) and twenty-two (22) south of the river and section twenty-four (24) and Paul Ducharme's private claim number one and August Grignon's private claim No. 35 north of the river.

That where the said river passes between sections twenty-one (21) and twenty-two (22) south of the river and said section twenty-four (24) and said private claims Nos. one (1) and thirty-five (35), north of the river it flows nearly east and is divided into four channels.

said*

That pursuant to an act of the legislature of the State of Wisconsin approved August 8, 1848, the board of public works organized under said act located one of the dams of improvement of the Fox and Wisconsin rivers across said Fox river from lot five (5), in section twenty-two (22), south of the river to the opposite or north bank of the river on the line upon which the same was constructed as hereinafter stated and specifically described, and also
84 located a canal leading from the pond above said dam around the rapids of said river, where the same passes said islands, to a point in said river below said islands, which said canal, together with the pond above said dam, leads across said fractional section No. twenty-four (24) and said private claim No. one (1) and said private claim No. thirty-five (35) and empties into said river on the north side thereof below said private claim No. thirty-five (35).

That at the same time the said board of public works located an embankment to retain the waters of said river as they might be raised by said dam along the south bank of said river from the south dam landing upon lot five (5), across the upper part of lot five (5), and across lots six (6) and seven (7) and eight (8), in said section twenty-two (22), south of the river.

That in the years 1854 and 1855, pursuant to such acts of the legislature approved August 8th, 1848, and to chapter ninety-eight (98) of the Laws of 1853, and to the location of said works as hereinbefore specified by the board of public works, the Fox and Wisconsin Improvement Company built a dam across the Fox river from lot five (5), in section twenty-two (22), on the south side of the river to the opposite or north bank of the river on a line running nearly due north to a point near to and within about 75 feet of said north bank, thence in the bed of the river in an easterly direction nearly parallel to said north bank to a point nearly opposite to the middle of Island No. four (4), thence on and near to the water edge of said bank to the first lock, which is located nearly opposite to the middle of Island No. three (3), such dam, together with said lock, operating to raise and retain the waters of said river at the

[* In pencil in copy.]

same uniform level along the entire length of the face of said dam, including its extension to said lock, and pursuant thereto
85 said company built an embankment extending from the south end of said dam on lot five (5), across the upper part of lot five (5), and across lots six (6), seven (7), and eight (8), in section twenty-two (22), of sufficient height to retain the waters of said river as raised by said dam, whereby and by virtue of section sixteen (16) of said act approved August 8, 1848, and the acquisition of the right of flowage of said dam and the location of said works by the board of public works the water power and hydraulic power created by said dam became the property of the Fox and Wisconsin Improvement Company.

That at or about the same time said Fox and Wisconsin Improvement Company, pursuant to said act and said location, built a canal reaching from a point above said dam to a point below Kaukauna rapids, said canal including the aforesaid extension of said dam and pond, being in all about one and one-fourth (1¼) miles long, and having in the same a guard-lock and five lift-locks, all combined having a lift of about fifty (50) feet; that such dam, canal, and embankment on the 15th day of April, A. D. 1856, were constructed nearly to completion, and shortly thereafter were fully completed, pursuant to the direction given in the act of the legislature approved October 3, 1856, and all according to the report of D. C. Jenne, chief engineer of the directors of the Fox and Wisconsin Improvemet Company, and according to the location made by the board of public works aforesaid, and in all respects were so constructed and completed as the same remain and now are, excepting as to a slight change in a part of said dam made by the United States, as hereinafter mentioned; that such works were built at an expense of several hundred thousand dollars and have been maintained during their respective control over the same by the Fox and Wisconsin Improvement Company, the Green Bay and Mississippi Canal Company, and the United States at an annual
86 expense of from one hundred dollars ($100) to two thousand dollars ($2,000).

That the said Fox and Wisconsin Improvement Company in 1855 acquired by purchase that part of fractional section twenty-four (24) extending from a point some distance above the north and south line of said dam down river to the northeast boundary of said fraction and from the thread of said river to a line twenty feet northwesterly from the northwesterly bank of said canal and said extension of the dam and pond.

That the length of said canal, including the aforesaid extension of said dam and pond, on said fraction was and is about eleven hundred feet, of which about one thousand and fifty feet *is* below the north and south line of said dam so built and nine hundred and fifty feet of which *is* below the present north and south line of the portion of the dam built by the United States.

[* In pencil in copy.]

That in 1856 said Fox and Wisconsin Improvement Company acquired by purchase the undivided half of that part of private claim No. 1 lying between said land and said river and, including the bed thereof, to the middle thread thereof above Island No. 4 and to the main channel thereof from head of Island No. 4 to Island No. 3 and of north channel thereof below head of Island No. 3.

That in 1854 John Hunt, the then owner of lots six (6) and seven (7), south of the river, granted to the Fox and Wisconsin Improvement Company and its legal representatives the right to erect and forever maintain an embankment of the dimensions as surveyed by the engineers of said company, reserving to himself the right to use said embankment when completed, but not so that the same shall be injured through lots six (6) and seven (7), in section twenty-two (22), of township twenty-one (21) north, of range eighteen (18) east, on the east side of the Fox river; also the privi-
lege of excavating a ditch along the south or east side of
87 said embankment not exceeding three feet in width and upon the south or east side of the said survey and stakes as set.

That by the appropriation under said act approved August 8th, 1848, and the building and maintaining of the dam, canal, and embankment hereinbefore specified the State of Wisconsin and the Fox and Wisconsin Improvement Company and the Green Bay and Mississippi Canal Company acquired the easement in and to the entire river bed against lot five (5) extending to the thread of the stream, against the same, and in and to the entire banks of the same for a dam landing and site for an embankment to retain the water raised by such dam.

That by the location of said works by the board of public works and the building of said dam and canal and embankment and the raising and maintaining of the water held -hereby and by purchase the Fox and Wisconsin Improvement Company and the Green Bay and Mississippi Canal Company acquired the right to flow all lands flowed by said dam and embankment.

That in 1866 this defendant, The Green Bay and Mississippi Canal Company, acquired by purchase all the interest of the Fox and Wisconsin Improvement Company in said town and range, including all the hydraulic power maintained and f[illegible]ished by said dam.

That in 1875 and 1876 the United States, having m[illegible]e purchase from this defendant, The Green Bay and Mississippi Canal Company, as hereinafter specified, of the works of improvement for purposes of navigation, rebuilt north and south line and section of said dam at a point on said fractional section 24 about one hundred feet below the old terminous of such north and south line on the north side to a point on lot 5 about fifty feet below the old dam landing, leaving the north and south line and section of the old dam substantially complete, but wholly submerged by new structures.

That said dam and the embankment leading from south
88 end of same up and across lots 5, 6, 7, on north side of said Fox river, has been continually maintained and annually re-

paired, under claim of right by Fox and Wisconsin Improvement Company, from the spring of 1855 to the fall of 1875 and for more than twenty years, and said rebuilt dam has been maintained by the United States from the fall of 1875, under claim of right, under deed to it from this defendant, hereinafter described.

That on the 18th day of September, 1882, this defendant made conveyance to the United States, of which a copy is hereto annexed, marked "A," and made part of this answer; that this defendant retains all the interest in all of said property not transferred to the United States by said conveyance, except that it has leased certain parcels thereof to certain of its codefendants herein.

That this defendant has also acquired by purchase (*a*) that part of north half private claim No. 35 bordering said north channel on the north and extending from the middle thread thereof to the pond and canal now used by the United States and described in complaint; (*b*) that this defendant, The Green Bay and Mississippi Canal Company, is the owner of such interests in Islands No. 1, 2, 3, and 4 as is particularly specified hereinbefore in plea in abatement; which specification is hereby referred to and made part of this plea, but which is here omitted to avoid unnecessary repetition.

That the lands owned by the Green Bay and Mississippi Canal Company in fractional section 24 and in private claim No. 1 are sufficient in extent to afford mill sites to mills of capacity enough to use all the water power furnished by or at said dam; that such use would not interfere with or prevent the flow of the one-sixth part of said Fox river down said south channel and against the land of the plaintiff below said dam called Government dam and below the point where the waters so used as aforesaid shall be turned
89 back into the river, and would not interfere with or prevent any valuable use the plaintiff has a right to make of any of the waters of said river.

But that to confine this defendant, The Green Bay and Mississippi Canal Company, to the use of the water power furnished by said dam "in such a way or manner as that all of the water so taken out" of said mill pond can and will "be returned into the main channel of said river immediately at the foot of said Government dam" (meaning thereby the foot of the north and south line of said dam) would render all of said water power practically valueless to the Green Bay and Mississippi Canal Company, the owners thereof, and to any and all other persons, and so destroy property of value of many thousands of dollars, and prevent the building and operating of mills of value of hundreds of thousands of dollars, and the employment of hundreds of laborers, and the annual manufacture of many thousands of dollars worth of articles useful to the community, and serve no useful purposes to or for defendants.

That by virtue of the right so acquired by this defendant now answering it is the owner of all of the water power created by the Government dam in question, and has the right to make use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension, to said lock opposite Island No. 3 and the middle

of Island No. 4, where it was contemplated by the board of public works the same should be used.

For a further and separate defense in bar and by way of counterclaim thereto, the defendant here answering further says:

III.

That in or about the year 1886 this defendant caused to be brought in the circuit court for Outagamie county, Wisconsin,
90 an action against The Kaukauna Water Power Company, Bradler Smith and Company, James C. Delaney, Charles D. Cassed, David McCartney, James H. Elmore, Joseph Kline, The Milwaukee, Lake Shore and Western Railway Company, and Badger Paper Company and B. Aymar Sands, as trustees, defendants, and being all or nearly all of the parties under whom the parties in the present action have derived title to the property now claimed by them.

That in the plaintiff's complaint in such action the facts stated in the second defense of this answer were charged in substance and charged in connection with facts of which the court takes judicial knowledge, being largely the legislation of Congress and of the State, wherein it was specially charged as follows, to wit: "That the United States has the use and control of said canal, dam, and embankments appurtenant" (meaning thereby the Government dam mentioned in the second defense), "and of the water furnished thereby for purposes of navigation only, and this plaintiff has the right to the exclusive use of same and has title to and possession of same for purposes of using all surplus water drawn and to be drawn from said mill pond over and above the amount necessary for use in navigation.

"That this plaintiff also owns vacant lots reaching from said canal to the river below said dam, convenient for use for mills run by hydraulic power drawn from the pond created by said dam and large enough to make practical use thereon of all the hydraulic power furnished by said dam;" and wherein judgment was prayed, among other things, "commanding the defendant The Kaukauna Water Power Company to rebuild and restore to its former state and condition the embankment and drain on said south bank of said river upon and across said lot 6," etc., "and also perpetually enjoining and restraining the defendants and all and singu-
91 lar their agents, servants, and employés from drawing any water from said mill pond for hydraulic purposes or any other purpose than the ordinary use for agriculture." To this complaint the defendants The Kaukauna Water Power Company, Bradner Smith and Company, The Milwaukee, Lake Shore and Western Railway Company, and Badger Paper Company put in answer, and the issues so joined came on for trial before the court and were duly tried, and the finding of the court thereon filed on the 10th day of March, A. D. 1887, upon which judgment was entered on the same 10th day of March, A. D. 1887, dismissing the plaintiffs' bill of complaint, but on appeal therefrom to the supreme court of

Wisconsin said judgment of the circuit court of Outagamie county was, by judgment of the supreme court of Wisconsin, on the 13th day of December, 1887, reversed and the same thereby remanded to the circuit court, with directions to give judgment for the plaintiffs, as indicated in the opinion of the supreme court, to which opinion of the supreme court, as reported in volume 70 of the Wisconsin Reports, at page 635, reference is here made as a part hereof; that in and by said judgment of the supreme court it was, among other things, found and adjudged as follows, to wit: "It requires no argument to demonstrate that the water power reserved to the State by section 16 of the act of 1848 was granted to the Fox and Wisconsin Improvement Company by chapter 98, Laws 1853; that the same passed to the plaintiff by the purchase under foreclosure of the trust deed and mortgage and the conveyance thereof to it by the trustees and mortgagees therein, and that in its conveyance to the United States the plaintiff reserved to itself all of the surplus water power created by the improvement." We conclude, therefore, that whatever rights the State took to the Kaukauna water power by the act of 1848 (which is the absolute ownership of the whole thereof, if that is a valid act) is vested in the plaintiff; that by virtue
92 of this judgment all of the defendants to said action are concluded, and that the entire water power created by the Government dam in question was thereby declared to be vested in and the property of the defendant here answering. As its own property, the defendant here answering has the right to use it where it may and where it will, and especially upon the lands and property designated in its complaint in the action in which the judgment aforesaid was entered.

And for a further defense in bar and by way of limitation the defendant here answering alleges:

IV.

That it, this defendant, and by its tenants, has used a large amount—about one-half part—of the water power furnished by said dam upon the south or upper half of private claim No. 1, at points from 1,200 to 2,000 feet below the north and south line of the dam called the Government dam, continuously and under claim of right and title so to use same for more than twenty years prior to the commencement of this action, and that it has so used still larger amount—more than one-half thereof—for more than two years prior to the commencement of this action.

Wherefore the defendant here answering prays judgment of this court:

First. Any decree to be entered in this action determining and adjudicating what share or proportion of the flow of said Fox river where the same passes Islands Nos. 3 and 4, in township 21 north of range 18 east, is appurtenant and of right should be permitted to flow in the south, middle, and north channels of said river respectively shall declare and be made subject to the right of the defendant here answering to use all of the water power created by the

said Government dam on its own lands on the north side of
93 said river or elsewhere as it shall see fit, and that the apportionment of the flow of the river so to be made shall be confined to such part of the river, if any, as shall not be so used, and shall be permitted to flow in the channel of said river below said dam.

And adjudging that this defendant may have such other judgment, order, or relief in the premises as shall be just and equitable; and,

Second. Adjudging that the plaintiffs and the Kaukauna Water Power Company pay to this defendant here answering its costs and disbursements incurred in this action.

B. J. STEVENS,
Att'y for G. B. & M. C. Company, Def't.
Residence, Madison, Wisconsin.

E. MARINER,
Of Counsel; Residence, Milwaukee, Wis.

EXHIBIT A.

This indenture made this eighteenth day of September, in the year of our Lord one thousand eight hundred and seventy-two, between the Green Bay and Mississippi Canal Company, a corporation existing under the laws of the State of Wisconsin, of the first part, and the United States of America, of the second part.

Whereas, in and by an act of Congress entitled "An act for the improvement of water communication between the Mississippi river and Lake Michigan, by the Wisconsin and Fox rivers," approved July 7th, 1870, to which reference is here made, the Secretary of War was authorized to ascertain at any time he should deem proper, within three years from the passage of said act, the sum which ought in justice to be paid to the Green Bay and Mississippi Canal Company, a corporation existing under the laws of Wisconsin, as an equivalent for the transfer of all and singular, its property and rights of property, in and to the line of water communication, between the Wisconsin river aforesaid, and the mouth of the Fox river, including its locks, dams, canals and franchises, or so much
of them as should in the judgment of said Secretary be
94 made, and to that end he was authorized to join with said company, in appointing a board of disinterested and impartial arbitrators, one of whom should be selected by the Secretary aforesaid, another by said company, and the third by the two arbitrators so selected.

And whereas, a board of arbitrators duly constituted and acting under and pursuant to said act of Congress did duly find and report to the said Secretary of War by their report in writing, bearing date on the fifteenth day of November, eighteen hundred and seventy-one, that the sum which in justice ought to be paid to said company as an equivalent for the transfer of all and singular its property and rights of property in and to the line of water com-

munication aforesaid, including its locks, dams, canals and franchises, was the sum of three hundred and twenty-five thousand dollars; and did further find and report that, whereas, under the act of Congress aforesaid, the Secretary of War might in his judgment decide that the personal property of said company might not be needed and that a part of the franchises of said company, viz: the water powers created by the dams and by the use of the surplus waters not required for purposes of navigation, might not be needed, the value of such personal property, was the sum of forty thousand dollars, and the value of such water power and lots necessary to the enjoyment of the same, subject to all rights to use the waters for purposes of navigation, as the same is reserved in all leases made by said company, and subject also to all leases, grants and assignments made by said company, was the sum of one hundred and forty thousand dollars, which said sum was to be deducted from the said sum of three hundred and twenty-five thousand dollars, in case the said Secretary or Congress should determine that said water powers were not needed for public use, and which said sum of forty thousand dollars should also be deducted from said sum of three hundred and twenty-five thousand dollars in case said Secre-
95 tary or Congress should determine that the said personal property was not needed for public use.

And whereas, the said Secretary of War did, pursuant to said act of Congress, duly make his report in writing to Congress, bearing date on the 8th day of March, A. D. 1872, wherein and whereby he did, among other things, report in substance as follows, to wit:

The Secretary is of the opinion that the personal property appr-ised by said arbitrators at forty thousand dollars is not needed for public use.

He is further of opinion that the franchises of said corporation, that are appr-ised by said arbitrators at the sum of one hundred and forty thousand dollars, are not required for the purposes of navigation, and are therefore not needed. Deducting the above valuations of property, franchises, etc., which, in the opinion of the Secretary, are not "needed," within the meaning of that word as used in said act, the valuations of the remaining property, franchises, etc. as found by said arbitrators, *is* one hundred and forty-five thousand dollars. The Secretary reports to Congress that all the property, franchises, etc. so valued at one hundred and forty-five thousand dollars are needed for the purposes of navigation, and said amount of one hundred and forty-five *hundred* dollars is the sum which, in his opinion, ought in justice to be paid to such corporation as an equivalent for the transfer to the United States of said property, franchises, etc., so needed.

And whereas, under and by an act of Congress, entitled "An act making appropriations for the repair, preservation and completion of certain public works on rivers and harbors and for other purposes," approved the *10th day of *June, A. D. 1872, Congress, at its then present session, did duly elect to take such property, by making an appropriation to pay the amount awarded—in the
96 following language, to wit: "For payment to the Green Bay

and Mississippi Canal Company for so much of all and singular its property and rights of property in, and to the line of water communication between the Wisconsin river and the mouth of Fox river, including its locks, dams, canals, and franchises, as were, under the act of Congress for the improvement of water communication, between the Mississippi river and Lake Michigan, by the Wisconsin and Fox rivers, approved July seventh, eighteen hundred and seventy, reported by the Secretary of War, to be needed, in his communication to the House of Representatives, dated March eighth, eighteen hundred and seventy-two, one hundred and forty-five thousand dollars."

Now therefore, this indenture witnesseth, that in consideration of the premises, and fully to comply with the requirements of the said act of Congress, approved July seventh, eighteen hundred and seventy, and to accomplish the intents and purposes thereof, and in consideration of the sum of one hundred and forty-five thousand dollars, paid by the United States of America, the said party of the second part, the receipt whereof is hereby acknowledged the Green Bay and Mississippi Canal Company, the said party of the first part, hath granted, bargained and sold, and by these presents doth grant, bargain, and sell unto the said, The United States of America the party of the second part, the following-described property, rights, franchises, etc. situated in the State of Wisconsin, and described as follows, to wit: All and singular its property and rights of property, in and to the line of water communication between the Wisconsin river aforesaid and the mouth of the Fox river, including its locks, dams, canals and franchises, saving and excepting therefrom, and reserving, to the said party of the first part, the following-described property, rights and portion of franchises, which, in the opinion of the Secretary of War, and of Congress, are not needed for public use to wit:

97 First. All of the personal property of the said company, and particularly of all such property described in the list or schedule attached to the report of said arbitrators, and now on file in the office of the Secretary of War, to which reference is here made, whether or not such property be appurtenant to said line of water communication.

Second. Also all that part of the franchise of said company, viz: the water powers created by the dams, and by the use of the surplus waters not required for the purpose of navigation, with the rights of protection and preservation appurtenant thereto, and the lots, pieces or parcels of land, necessary to the enjoyment of the same, and those acquired with reference to the same all subject to the right to use the water for all purposes of navigation as the same is reserved in lease heretofore made by said company, a blank form of which attached to the said report of said arbitrators is now on file in the office of the Secretary of War, and to which reference is here made, and subject also to all leases, grants and assignments made by said company; the said leases, etc. being also reserved therefrom.

Together with all and singular the hereditaments and appurte-

nant-s unto the above granted and described property, rights and franchises not so saved, excepted or reserved belonging or in anywise appertaining, and all the estate, right, title, interest, claim or demand whatsoever, of the said party of the first part, either in law or equity, either in possession or expectancy of, in and to the above-granted property, rights and franchises, not so saved excepted or reserved and their hereditaments and appurtenances.

To have and to hold the above granted and described property, rights and franchises not saved, excepted or reserved as aforesaid and every part and parcel thereof, together with the hereditaments and appurtenances thereunto belonging unto the said United States of America, party *to* second part, its successors and assigns for--ver.

98 In witness whereof, the party of the first part hath hereunto caused its corporate seal to be affixed and these presents to be subscribed by its president, and attested by its assistant secretary *pro tempore*, on the day *if* the date of these presents.

SAMUEL MARSH,
President of the Green Bay & Mississippi Canal Company.

[Corporate Seal of G. B. & Miss. Canal Co.]

Attest: HENRY C. BLAKE,
Assistant Secretary pro Tempore of
Green Bay & Mississippi Canal Co.

(The words "10th" and "June" appear on the record in pencil, apparently inserted after instrument was recorded.—REGISTER.)

Endorsement: Circuit court, Outagamie county. Patten Paper Comp. (Limited), pl'ffs, *vs.* Kaukauna Water Power Co. *et al.*, def'ts. Answer of def't G. B. & M. C. Co. B. J. Stevens, att'y for G. B. & M. C. Co., Madison, Wis. Served by copy March 10, 1890. Alfred L. Cary, att'y for def't Kaukauna Water Power Co. Moses Hooper, att'y for plaintiffs. Winkler, Flanders, Smith, Bottum & Vilas, att'ys for def't Chicago & Northwestern R'y Co. P. R. Barnes, att'y for Reese Pulp Co. Filed Apr. 14, 1890. Circuit court, Outagamie county. Geo. W. Gerry, clerk, by A. M. Smith, deputy. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

99 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED, UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, *et al.*, Defendants.

It is hereby stipulated and agreed by and between The Green Bay & Mississippi Canal Company, one of said defendants, the said Kaukauna Water Power Company, and other defendants who have

appeared and answered in this action, by Alfred L. Cary, their attorney, that the answer of said defendant, The Green Bay and Mississippi Canal Company, which was served, on or about March 11th, 1890, upon said plaintiffs and upon the Kaukauna Water Power Company and other defendants who have appeared and answered herein, may stand and be answered or demurred to the same and with the same effect as if accompanied by or as if it were in form a cross-bill or cross-complaint setting up formally the same matters now stated in said answer, and that said answer may be treated and considered by the other parties to this suit who have appeared or answered herein as if accompanied by a cross-complaint in due and proper form.

Dated March 19th, 1890.

B. J. STEVENS,
Att'y for G. B. & M. C. Co., &
E. MARINER,
Of Counsel for Do.
ALFRED L. CARY,
Att'y for K. W. P. Co. et al.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, *et al. vs.* Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, *et al.*, defendants. Stipulation.

100 March 19, 1890. Filed Apr. 4, 1890. Circuit court, Outagamie county. Geo. W. Gerry, clerk, by A. M. Smith, deputy. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

101 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PAPER COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, Charles S. Fairchild, Reese Pulp Company, Bradner Smith & Company, and Albert W. Priest, Defendants.

SIRS: Take notice that upon the annexed affidavit and all papers filed or served in the above-entitled action, application, on the part

of the defendant, The Green Bay & Mississippi Canal Company, will be made to the circuit court for Outagamie county, at the adjourned term of said court, to be holden at the court-house in the city of Appleton in said county on the 29th day of August, A. D. 1890, at the opening of court on that day, or as soon thereafter as counsel can be heard, for leave to file and serve herein its amended answer to the plaintiffs' complaint herein, a copy of which amended answer is hereto annexed; and for such other and further order or relief in the premises as shall be equitable and proper.

Yours, etc.,

B. J. STEVENS,
Of Madison, Wis., Attorney.

E. MARINER,
Of Milwaukee, Wis., of Counsel.

To Messrs. Hooper & Hooper, Oshkosh, Wis., attorneys for plaintiffs; D. S. Ordway, Esq., and Alfred L. Cary, Esq., of Milwaukee, Wis., attorneys for the Kaukauna Water Power Company and other defendants; Messrs. Winkler, Smith, Flanders, Bottum & Vilas, of Milwaukee, Wis., attorneys for Chicago & N. W. R'y Co.; P. R. Barnes, Esq., of Oshkosh, Wis., attorney for Reese Pulp Co.

102 In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and Others, Plaintiffs,
vs.
THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded with Others, Defendants.

STATE OF WISCONSIN, *County of Dane,* } *ss:*

B. J. Stevens, of Madison, in said county, being duly sworn, deposes and says: That he is the attorney for the defendant, The Green Bay & Mississippi Canal Company, in the above-entitled action, with E. Mariner, Esq., of Milwaukee, as counsel: and that said defendant's original answer herein was prepared without sufficient opportunity for conference between the attorney and counsel, and hence fails, as he is advised and believes, to sufficiently and properly set up the defenses to the plaintiffs' cause of action had by said defendant, although an attempt thereto was made in said answer; that an amended answer, substantially in the words and figures of the amended answer hereto annexed, was prepared and submitted to the court, with application for leave to file, on the 14th day of July, A. D. 1890, to which D. S. Ordway, Esq., the attorney for certain of defendants, objected, on the ground that no opportunity to inspect the same had been given; and the attorneys for plaintiffs not appearing: whereupon, the court directed notice of application for leave to file to be given, returnable at its adjourned session to be held August 29, A. D. 1890.

B. J. STEVENS.

Subscribed and sworn to before me this 19th day of August, A. D. 1890.

HENRY KESSENICH,
Notary Public, Dane Co., Wis.

103 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PAPER COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, Charles S. Fairchild, Reese Pulp Company, Bradner Smith & Company, and Albert W. Priest, Defendants.

The Green Bay & Mississippi Canal Company, one of the defendants named in the above-entitled action, for its amended answer to the plaintiffs' complaint in said action, says:

I.

It admits the allegations of paragraphs 1, 2, 3, 4 and 5 of the complaint, excepting that it has no knowledge or information sufficient to form a belief as to the allegation of paragraph 5, giving the proportion of water passing through the channels between Islands Nos. 4 and 3, and Island No. 3 and the north shore.

It admits paragraph 6 of the complaint, excepting that it does not have any knowledge or information thereof sufficient to form a belief as to the head of water raised by the dam mentioned, nor as to whether, at the time mentioned, Meade and Edwards were the owners of the islands mentioned.

It does not have any knowledge or information sufficient to form a belief as to the allegations of the 7th, 8th and 10th paragraphs.

It admits the allegations of paragraph 9 of the complaint, excepting that it does not have any knowledge or information sufficient to form a belief as to the worth of the pulp mill, whether it can be run or operated without the use of water, nor whether it is worth $15,000 per year as stated.

Upon information and belief it admits the allegations in paragraphs 11 and 12 and admits the allegations of paragraphs 13, 14 and 15, excepting that the pond, described in part as a canal in

paragraph 13, extends down to a point below the head of Island No. 3, and a large part of the way in the original bed of said Fox river, and so qualified admits the allegations made, excepting that this defendant, its lessees and tenants, not only propose to continue drawing and passing through said extended pond, or canal, as it is called in the complaint, not only the one-half of the flow of the river, and called the half appurtenant to the said north channel, but the entire flow of the water of the river if need be.

It admits the allegations of paragraph 16, excepting that it claims a paramount right to the use, if need be, of all of the water power created by the pond above the Government dam, so called, on the north side, if it shall so elect.

104 It does not have any knowledge or information sufficient to form a belief as to the allegations in paragraphs 17, 18 and 19, excepting that it admits that Smith and Erb are trustees in the trust mortgage mentioned.

Upon information and belief it admits the allegations of paragraphs 20 and 21.

It does not have any knowledge or information sufficient to form a belief as to the allegations in paragraphs 22 and 23, excepting that it admits that this defendant is interested in Island No. 3, as therein stated.

It does not have any knowledge or information sufficient to form a belief as to the allegations of paragraphs 24, 25 and 26, excepting that it admits that the defendant here answering is the owner of and interested in Island No. 4, as therein stated.

It admits the allegations of paragraphs 27 and 28, 29 and 30, excepting that it does not know that the Chicago & Northwestern Railway Company is the owner, as therein stated; and it does not have any knowledge or information sufficient to form a belief as to the allegations stated in paragraphs 31 and 32.

II.

And the defendant here answering, for a further and separate defense in bar to the plaintiffs' cause of action, and by way of counter-claim thereto, further shows to the court and says:

That the Fox river is, and within the memory of man always has been, a navigable stream, flowing in nearly a northeasterly course through township number twenty-one (21) north, of range eighteen (18) east, in the county of Outagamie, Wisconsin, and between sections twenty-one (21) and twenty-two (22) south of the river, and section twenty-four (24) and Paul Ducharme's private claim No. 1 and August Grignon's private claim No. 35, north of the river; and where the said river passes between said sections twenty-one (21) and twenty-two (22) south of the river, and said section twenty-four (24) and said private claims Nos. one (1) and thirty-five (35) north of the river, it flows nearly east.

And at the time of the survey by the United States of the lands adjacent to said river at said place, the borders of the same were meandered and defined by meander lines; and the shores of the

islands in said river at said place known according to Government survey as Islands Nos. 1, 2, 3 and 4 were also so meandered and defined.

That in the said Fox river below Lake Winnebago, including the place where it passes the above-described sections, there are and always have been rapids and abrupt falls, and any improvement of the navigation of the river so as to secure slack-water navigation through or by said rapids and falls, would necessarily require the building of dams, locks and canals at great expense.

In order to aid in the improvement of said Fox river, and of the Wisconsin river contiguous thereto, and to connect the same by a canal, and thereby secure great advantage to the commerce of the United States, Congress did, by an act approved August 8, 1846, grant to the State of Wisconsin on its admission into the Union, a large amount of public lands, to wit, many thousands of acres, for the expressed purpose of, and in trust for, improving the navigation of said Fox and Wisconsin rivers.

On the 29th day of June, 1848, the State of Wisconsin, having been admitted into the Union, accepted said grant of land for the uses and purposes expressed in said grant; and by an act of its legislature, approved August 8, 1848, undertook the improvement of the said Fox and Wisconsin rivers, and to make such improvement by means of dams, locks and canals wherever necessary to secure slack-water navigation around rapids and abrupt falls, the sale of said lands, and the application of the proceeds thereof to the said uses for which the same had been granted; and in said act provided for a board of public works to superintend and accomplish the same.

By said last-mentioned act, providing, among other things, as follows, to wit, that "whenever a water power shall be created by reason of any dam erected or other improvements made on any of said rivers, such water power shall belong to the State, subject to the future action of the legislature," the said State of Wisconsin did appropriate to its own use, and the use of its successors and assigns, the water power of the said Fox river, created by dams to be erected in the progress of the work of improving said Fox river.

105 That one of the rapids in said river below Lake Winnebago, around which, as aforesaid, it was necessary to secure slack-water navigation by means of dams, locks and canals, and of which the water power to be created thereat was so appropriated by the State, is located at the point where said Fox river flows between the sections and private claims aforesaid, and is commonly known and hereinafter, in this answer, is designated as the Kaukauna rapids.

Immediately upon the passage of said acts of Congress and of the legislature and in execution of the trust thereby created, the State, through its board of public works, settled upon and adopted a plan for the improvement aforesaid. At this time, the lands on either side of the river at said Kaukauna rapids, together with the islands between, were held and owned by many persons in severalty, single ownerships being confined in each case to narrow frontages

on the river; while the ownerships of the islands were, for the most part, separate and distinct from the ownerships of the banks of the river and so continued to be held in severalty until within a few years prior hereto, when some of them became and still are united, as alleged in the complaint. In no case, while so held in severalty, was it practicable to utilize as water power upon the lands of any single ownership more than an unimportant or fractional part of the flow of the river; and no utilization or occupation as water power of the flow of the river at said locality whatsoever had been made or had, excepting an unimportant power created by a small wing dam, subsequently purchased by the Fox and Wisconsin Improvement Company, as hereinafter mentioned; nor was there any such utilization or occupation as water power other than under the Fox and Wisconsin Improvement Company for nearly a quarter of a century thereafter, nor had there been down to a time only a few years prior to the commencement of this action. That at the time the State began this work of improvement, no person had the right to build a dam across said river, and the State has never authorized any person or corporation to build and maintain a dam across said river at that point save this defendant and its grantors. It was competent for the State and would have worked little damage to the water-power rights of any owner of lands, at that time, to have adopted a plan of improvement whereby a series of dams with locks should have been constructed across the river, one closely succeeding the other, so that boats could have been locked from the level created by one dam, immediately into the level created by the succeeding dam, without any intervening canal; but such dams to have extended across the river, and to have sustained the whole force of the river, must necessarily have been long, strong and expensive. Instead thereof, the State determined upon and adopted the more economical plan or system whereby, as applied to the Kaukauna rapids, it was determined to build a low dam beginning on the south side near the head of the rapids extending downstream on or near the south bank of the river, across lots 8, 7, 6 and onto lot 5 of said section 22; and thence extending at about a right angle with the south bank nearly across the river, leaving an opening at the north end through which the whole water of the river could pass, and into which opening, during the period of construction, a guard-lock (so called) should for safety sake be placed; and thence further extending down the bed of the river parallel to and in part near to and in part on the north bank to a certain point at which should be placed a lift* lock [proper],† leaving between such last-mentioned extension of the dam and said north bank, a channel sufficiently large to fully pass the ordinary flow of the river; and which dam, by the aid of such lift* lock [proper],† should uphold and sustain the waters of said river throughout the full extent of said dam at one and the same level;

[* In pencil in copy.]
[† Words enclosed in brackets erased in copy.]

and whereby, at the lower end of the dam so extended and at the foot of the lock aforesaid, it was determined to construct, with locks, a canal on the said north bank, extending downstream and into the river at the foot of the rapids, through which locks and canal, boats could be passed; and around such locks, including the lock at the end of said dam, to construct sluices or sluiceways, through which sluiceways and through said locks and canal, all of the waters of the river, not used on the upper level, in an ordinary stage, could be discharged from level to level into the river below; and thereby the whole rapids at Kaukauna be overcome and a system of slack-water navigation, by means of such dam, canal and locks, be made to connect the slack water made by the said dam above the rapids with the slack water in the river below; and by which plan it was also contemplated and determined that certain lands should be acquired upon which the water powers created by said dam, canal, locks and sluices should be effectively utilized, and in the manner hereinafter more particularly mentioned.

106 In accordance with such plans so determined upon, the State of Wisconsin in part and its grantee, the Fox and Wisconsin Improvement Company, in part, prior to the fall of 1855, did construct and complete the said improvement at the said Kaukauna rapids in all respects fully as the same was so planned, determined upon and adopted; and did build said dam, with extensions and lock, at the end thereof, at the place and in the manner so contemplated, and without any openings on the south side of the river so as wholly to prevent the use of the water power created by said dam on the south side of the river; and did construct the channel between the lower extension of the dam and the north bank of the river, down to the lock, at the end thereof, of sufficient capacity to pass the ordinary flow of the waters of the river; and did construct with locks a canal extending from the foot of the lock at the end of said dam along the north bank down into the river below said rapids; and build said locks, including the lock at the end of said dam, with sluices or sluiceways around the same, whereby through said canal, locks and said sluiceways all of the waters of said river, in an ordinary stage, could be passed; and partly prior to the fall of 1855, and partly early in 1856, did acquire, by purchase and otherwise, lands for the location of said dam and canal thereon, and particularly for the utilization thereon of the water powers created by said dam and canal, which lands last mentioned lie, and, so far as material to this action, are particularly described as follows, to wit:

All that certain tract or parcel of land situate, lying and being at Kaukauna aforesaid, being part of said fractional section 24 north of the river, and described as follows: Commencing at a point at the upper or western extremity of the canal at Kaukauna aforesaid (meaning thereby the channel or portion of said dam between the lowest extension thereof and the north bank of the river) and twenty feet north of the northerly water line of the canal, running thence down along the bank of said canal and twenty feet distant from the water line as aforesaid, to the northerly line of the south

half of private claim No. 1 formerly owned by George W. Lawe, thence following said northerly line of the south half of lot 1 aforesaid, easterly to Fox river at low-water mark; thence upstream along the margin of the Fox river to the upper extremity of the guard-lock at the head of the canal; thence northerly to the place of beginning; such description embracing the towing path on the north side of the canal (not including any buildings or other improvements erected thereon) and all the land within the boundaries aforesaid, lying between said towing path and the Fox river, and including the bed thereof to the middle thread thereof, and including a small wing dam theretofore constructed on the bank of said river on such strip of land. Owing to a defect in the title, the interest so acquired in the lands aforesaid, while nominally the whole interest, was in fact only the undivided half interest. And the said State or its grantee, pursuant to and in execution of said plan of improvement, did cause said lands so acquired for the utilization of such water powers to be platted into what were termed water-power or mill lots, all of which lie on the north bank of said river, between said dam and canal on one side and the river on the other, and the greater number of which lie below the head of Island No. 3; and did cause openings or waste weirs, so called, to be inserted in said dam and in the embankments of said canal upon certain of the lots aforesaid for the purpose of utilizing such water powers; and did so construct the same fully in accordance with the plans aforesaid, all of which weirs were so constructed below the head of Island No. 4 and most of them below the head of Island No. 3; and did so acquire said lands for water-power uses as aforesaid, plat the same into mill lots, construct such waste weirs, and did hold out to the world, and did publicly declare that the same were so purchased, platted and prepared for water-power uses, and that such water powers, to wit: all of the powers created by said dam and canal, had been taken and appropriated by the State under said acts of legislation to the use of the State and its grantees, and were claimed to be their exclusive property, and did offer the same for sale or lease, to all persons desiring to purchase or lease the same to be used on said mill lots, and did lease portions of the same, and so did with the knowledge and according to the best of defendant's knowledge, information and belief, with the acquiescence of the said owners of lands on either bank, and of the islands in said river; and ever since then, said Fox and Wisconsin Improvement Company and the grantees and assigns of said State and of said Fox and Wisconsin Improvement Company have continued to so shut off the use of such water power upon and from the south side of the river and to so lease powers on
107 the north side and to so hold out to the world and to so declare, with reference to said mill lots and water powers, and all this with the knowledge, and until about five years prior to the commencement of this action, with like acquiescence or apparent acquiescence of all owners of lands upon the banks of said river and of the islands therein. And this defendant claims that by reason of such acts of legislation and the appropriation thereby made, the

construction and maintenance of said dam and canal, the user and claim aforesaid, it has acquired the right under said acts, and by prescription, to keep up and maintain said dam.

Defendant further says that the appropriation of said water powers by the State, including the water powers at Kaukauna, was absolutely necessary in order to prevent the proceeds of the public lands so granted by Congress for the uses aforesaid, from being expended upon dams which should furnish hydraulic power to the private owners of the lands bordering on the banks of said Fox river gratuitously, *i. e.*, without cost to them, and thus work a substantial diversion of the avails of such expenditures from the uses for which the public lands aforesaid had been granted; and also was absolutely necessary in order to secure a fund, consisting of such water powers and said lands, which should be of market value sufficient for the construction and completion of the said work of improvement so determined upon and adopted. The water powers so appropriated, including the said water powers at Kaukauna, were, and still are, of great value, and the full proceeds of the sale of the same and of the sale of the public lands so granted, together with large sums of money raised by the said Fox and Wisconsin Improvement Company, were applied to the cost of constructing said work of improvement according to said plans so adopted, and together were just sufficient to pay and discharge the full cost of completing the same, all as will hereinafter more fully appear.

The dam and canal in question were constructed, for the most part, by Morgan L. Martin, under a contract made with the State in 1851, which work was continued by the said Martin after the work of improvement had been granted to the Fox and Wisconsin Improvement Company; and were so constructed and finally completed under the act of the legislature of Wisconsin, approved Aug. 8, 1848, and acts of the legislature subsequent thereto, other than which there was no authority for building and maintaining same; and the same were completed in compliance with the report of D. C. Jenne, engineer, mentioned in the act of the legislature, approved October 3, 1856, and in all respects were so constructed and completed as the same remain and now are, excepting as to a slight change in a part of said dam, made by the United States, as hereinafter mentioned.

That on the 6th day of July, 1853, the State of Wisconsin, having found itself unable to fully complete said works of improvement from the grant of lands made by the United States, and the hydraulic powers created by dams built under said act, and having become largely indebted for moneys spent upon such improvement, including the dam and locks above mentioned, and being involved by numerous unfilled contracts, payments on which it could not make from funds derived from said grant of lands, or any other funds or property applicable thereto, the said State incorporated the Fox and Wisconsin Improvement Company for the purpose of completing such improvement of said Fox and Wisconsin rivers, and relieving the State of its indebtedness on account of the work theretofore done on the same, and from liability on contracts not then

executed. For such purpose the State of Wisconsin granted to the Fox and Wisconsin Improvement Company the works of improvement heretofore mentioned, together with all and singular the rights of way, dams, locks, canals, water power and other appurtenances of said works; also all the rights possessed by the State of demanding and receiving tolls and rents for the same so far as the State possessed or was authorized to grant the same, and all privileges of constructing said work and repairing the same, and all other rights and privileges belonging to such improvement to the same extent and in the same manner that the State then held, or might exercise such rights by virtue of the acts above referred to.

That such grant was made by chapter 98, of the Laws of 1853, and upon the condition that each of the members of said company should file with the secretary of state a bond, in the sum of $25,000, conditioned to vigorously prosecute the said improvement to completion and complete the same within three years from the passage of said act, and to pay all outstanding evidences of indebted-
108 ness on the part of the State as trustee, or otherwise issued on account of said improvement; and to save harmless the State of Wisconsin from any and all liabilities in anywise arising or growing out of the said improvement, and upon condition that such company should procure releases of all claims and demands against the State of Wisconsin from certain contractors on the Fox and Wisconsin rivers improvement therein named. And that as soon as the bond or bonds and releases referred to should be filed with the secretary of state the said company should be authorized to take possession of said improvement, appurtenances, property and assets thereby granted unto them.

That within the time provided therefor by said act making said grant, the corporators therein named fully complied with the said conditions precedent and filed with the secretary of state the bonds and releases referred to; and that on the 20th day of July, 1853, the secretary of state of Wisconsin made his certificate of the filing of said bonds and releases, and of his approval thereof, whereupon all of said dams, locks, canals, water powers and other appurtenances of said works, and all of said rights, powers and franchises, passed to and vested in the said Fox and Wisconsin Improvement Company.

That among the property which so passed to and vested in the Fox and Wisconsin Improvement Company were the said dam, locks and canals in township 21, range 18, and the hydraulic powers furnished by said dam; that said dam and canal were then partly completed.

That pursuant to the conditions of said grant to said Fox and Wisconsin Improvement Company, and to carry out the intention of the Congress of the United States in making said grant to the State of Wisconsin, the said Fox and Wisconsin Improvement Company proceeded as aforesaid to the entire completion of said works as then contemplated, and as enlarged by acts of legislature of Wisconsin, being chapter 98 of Laws of 1853, and chapter 112 of Laws of 1856, and to that end expended several millions of dollars, and

paid on account of State indebtedness of the State of Wisconsin several hundred thousand dollars.

That as this plaintiff is informed and believes, the said Fox and Wisconsin Improvement Company would not have complied with the conditions of said grant and taken title to the property therein named upon the conditions of said grant if they had not believed that they thereby became the owners of the hydraulic powers furnished by said dam, and others of a like character, and whose ownership depended upon the same facts and conditions.

The said Fox and Wisconsin Improvement Company, in order to raise funds for the completion of said work, and the payment of State indebtedness on account of the same, made its certain mortgage, bearing date August 1, 1853, to Isaac Seymour and William J. Averill, mortgagees in trust, to secure the bonds of said company to the amount of five hundred thousand (500,000) dollars, by which mortgage it mortgaged all the property of said company. And thereafter the company sold and delivered a large number of said bonds, but how many said defendant is unable to state.

That the legislature of Wisconsin, by an act approved October 3, 1856, in order to secure the enlargement and immediate completion of the improvement before mentioned, and the payment of the evidences of indebtedness issued by the State on account of the same, and to enable the Fox and Wisconsin Improvement Company to perform the duties required of it by said act, enacted that within ninety days after the passage of said act said company should make a deed of trust to three trustees of all the unsold lands granted to the State of Wisconsin to aid in the improvement of the Fox and Wisconsin rivers, and all the works of improvement constructed, or to be constructed, on said rivers, and all and singular the rights of way, dams, locks, canals, water powers and other appurtenances of said works, and all rights, privileges, franchises, belonging to said improvement, and all the property of said company, of whatever name and description, for the uses, trusts and purposes named in said act, which were, first, to secure to the State the faithful application of all moneys or property arising from the sale of the lands or water powers, or obtained on the faith of the same, to the construction and completion of the works of improvement contemplated in the said act and as therein provided, being the same works as those specified in said act of Congress making grant of lands to the State of Wisconsin, and to the payment of all outstanding evidences of indebtedness issued by the State on account of said improvement.

That immediately thereafter said act was accepted and
109 ratified by said Fox and Wisconsin Improvement Company, and on the 1st day of December, 1856, said improvement company made its deed of trust to trustees selected and approved pursuant to said act, which said trustees were Alexander Mitchell, Charles Butler, and Alexander Spaulding.

That on the 12th day of December, 1856, the then governor of Wisconsin certified that such deed had been made, and that the same was in conformity to said act. Such deed provided for a further issue of bonds of said company to the amount of one million

five hundred thousand (1,500,000) dollars, the proceeds of which should be expended for the purposes specified in said act of October 3, 1856.

That thereafter Alexander Mitchell resigned his position as trustee in said trust deed, and one Moses M. Davis was duly appointed in his place as his successor, and his appointment was ratified by said company.

That in September, 1863, the said Fox and Wisconsin Improvement Company had proceeded with the enlargement of said canal according to the plan adopted by chapter 289 of Laws of 1861, and sold and issued nearly all of its bonds secured by said trust deed, and the interest had become due and payable upon the same and had not been paid, and the indebtedness of the State, secured by said trust deed, had not been paid.

That thereupon the trustees then holding the estate granted by said trust deed, to wit, Alexander Spaulding, Charles Bulter and Moses M. Davis, proceeded to foreclose said trust deed in the circuit court for the county of Fond du Lac for the purpose of paying the State indebtedness incurred on account of said work, and the principal and interest of the bonds issued under such mortgage to Seymour and Averill, and the principal and interest upon the bonds secured by said trust deed, and to secure a fund for the further enlargement and completion of said improvement according to the provisions of chapter 289, Laws of 1861. Such proceedings were had therein—

That on the 4th day of February, 1864, judgment of foreclosure and sale of all said property under said trust deed was duly entered and recorded in said circuit court for the county of Fond du Lac.

That under and pursuant to said judgment all the lands and property of said company and all its rights, privileges and franchises were sold for the purposes aforesaid.

That on such sale a committee of the persons proposing to become, and who afterwards became, incorporated under chapter 289 of the Laws of 1861, bid in, and thereafter when incorporated as this defendant, took the title to, and by such sale and the confirmation thereof, and the conveyance of trustees under a direction of the court thereunder, this defendant became seized in fee of the works of improvement known as the Fox and Wisconsin improvement, together with all and singular the rights of way, dams, locks, canals and other appurtenances of said works, the right of receiving tolls and rents for the same, and all the privileges of said works, and all other rights, powers and privileges connected with said line of water communication by the State of Wisconsin granted to and vested in the Fox and Wisconsin Improvement Company and its trustees, or either, under and by virtue of the several acts of the legislature of the State of Wisconsin in relation thereto, among which were the acts approved July 6, 1853, March 31, 1855, and October 3, 1856; also all other corporate rights, privileges, franchises, powers and property, real and personal, vested in and belonging to said company, its trustees, or both, forming a part of or in any way connected with said improvement, of whatever name or nature, and

from whatever source derived, and all appurtenances thereunto appertaining, including and together with all strips or parcels of lands adjacent to said improvement or the water powers created thereby; also all of the water powers created by and upon the line of, or connected with the work of the Fox and Wisconsin rivers improvement, at whatever points located and wherever situated; also all rights, titles and interests in and to lands or other property acquired, through leases and agreements of all kinds, with reference to said improvement and water powers, including said dam and canal in township 21, range 18, and all hydraulic power furnished thereby, and the mill lots connected therewith. That the consideration bid for such property by the said committee and paid by the company afterwards organized, to wit, this defendant, was the sum of $191,000.

That out of the same and other moneys arising from the sale of lands granted by Congress as aforesaid, there was paid the amount of $218,178.75 of State indebtedness incurred on account of
110 such improvement, about $50,000 of trust expenses so incurred, and about $130,000 of construction indebtedness so incurred, and the further sum of $43,971.15, the latter being the amount in said suit adjudged necessary to complete the improvement of said Fox and Wisconsin rivers, according to the provisions of chapter 289 of the Laws of 1861, which said sums for State indebtedness and future construction were paid by said committee into the treasury of the State of Wisconsin, or on certificates of State indebtedness surrendered to the State and canceled.

That after said sale to said committee the parties represented by such committee formed a corporation called the Green Bay and Mississippi Canal Company, being this defendant, under and pursuant to said chapter 289 of the Laws of 1861, to wit: on August 15, 1866. That by its articles of association said corporation accepted the rights, powers, privileges, franchises, capacities, immunities, exemptions and burdens granted by and conferred under and imposed by said act and the acts amendatory thereof, and as such corporation received from said trustees, plaintiff in said action, by order of said circuit court of Fond du Lac county, conveyance of said rights, franchises and property, which conveyance was executed on the 18th of August, 1866.

Thereafter, this plaintiff under such conveyance entered into possession of all such property and the exercise of all such franchises, and pursuant thereto spent large sums of money in improving, repairing, preserving and operating said works of improvement, including said dam and canal at the Kaukauna rapids, and the water power connected therewith.

That the expenses of the maintenance of said waterway and improvement largely exceeded the revenues derived therefrom; and that the maintenance of the same appearing to the United States Government to be important to make a competing line of water communication, and for advantage in developing the Northwestern States and the commerce thereof, and to be of importance to the commerce of the nation, and more properly a public than a private

enterprise, the Senate and the House of Representatives of the United States passed an act approved July 7, 1870, whereby among other things it was provided that the Secretary of War be authorized to adopt for the improvement of the navigation of the Wisconsin river such plan as might be recommended by the chief Bureau of Engineers, and that said Secretary of War ascertain what sum in justice ought to be paid to the Green Bay and Mississippi Canal Company for all and singular its property and rights of property in said line of water communication, including its locks, dams, canals and franchises or so much of the same as should in the judgment of said Secretary be needed.

That the legislature of Wisconsin by act approved March 23, 1871, authorized and empowered this defendant to sell and dispose of the rights and property of this defendant to the United States as contemplated by said act of Congress.

That pursuant to such act of Congress a board of arbitrators was selected to appraise such property as therein provided. That such board of arbitrators determined the actual value of such property and rights of property of this defendant in said line of water communication, including its locks, dams, canals, franchises and fixtures attending the operation and repair of the same to be $1,048,070, and that the amount of money realized from the sale of lands heretofore granted by Congress to aid in construction of such line to be deducted from such actual value to be $723,070, leaving a balance of $325,000 to be paid to said company (this defendant) for all such property.

They also appraised the value of defendant's water powers and lots necessary to the enjoyment of same, subject to all rights to use the water for all purposes of navigation, at $140,000; and defendant's fixtures attending the operation and repair of the canals, being dredge-boats and other personal property, said arbitrators appraised at $40,000; same being parcel of the property valued at $1,048,070 and which might be thought not needed for public use. That said board of arbitrators reported their valuation to the Secretary of War. That pursuant to said act of Congress and the report of such arbitrators, the Secretary of War made his report to Congress that said property was of the value of $325,000. That the value of the water powers and lots necessary to the enjoyment of the same, subject to all rights to use the water for all purposes of navigation, was $140,000, including the franchise to use same. That the value of the personal property of said company was $40,000. That
111 in his opinion the personal property valued at $40,000, and the franchises of said corporation, to wit, the water powers created by the dams and the lots necessary to the enjoyment of the same, subject to all rights to use the water for all purposes of navigation, were not required for purposes of navigation, and were therefore not needed by the United States.

That thereupon Congress made an appropriation by act approved January 10, 1872, for the purchase of the rights and property of said company, reported by said Secretary of War to be needed for the purposes of navigation, of $145,000, which sum was

paid to this company on or about the 18th day of September, 1872. Whereupon this defendant conveyed to the United States of America certain of its franchises and property, as appears by its deed, the material parts of which appear in Schedule "A," hereto or to this defendant's original answer annexed.

That this defendant is the owner of and entitled to the exclusive use and control of the water power or hydraulic power, supported, maintained, and furnished by the above-mentioned dam across Fox river, subject only to the right of the United States Government to draw only so much water therefrom as is necessary to fill the canal on the north side of said river, leading from the pond above said dam to the river below said dam, for the purposes of navigation only, as specified in said conveyance from this defendant to the United States.

That the United States has the use and control of said dam, canal and embankments appurtenant and of the waters therein for purposes of navigation only, and this defendant has the right to the exclusive use of same, and has title to and possession of the same for the purposes of using all surplus water drawn and to be drawn from said pond above said dam over and above the amount necessary for use in navigation.

That this defendant also owns the said lots of land, lying between the said dam and canal and the river and reaching from said dam and canal to the river, acquired for the use of mills run by hydraulic power, as hereinbefore mentioned, and called mill lots; and that the same are sufficient in all ways to make practical use thereon of all hydraulic power furnished by said dam.

That the use of said surplus water drawn and to be drawn from said pond is of great value to this defendant, to wit, of the value of $250,000, to be used on defendant's lots as aforesaid, and on such other lands and lots as defendant may purchase, or as defendant may lease water to be used upon.

That the water power created as aforesaid came to be used in some degree soon after the completion of the aforesaid dam and canal, and in increasing degree ever since then has been used, until now, at this time, when a large part thereof is utilized, and the greater part of the same is so utilized upon that portion of the lands so purchased by the State or its grantee, the Fox and Wisconsin Improvement Company, lying between the said dam and canal on one side, and the river on the other; that said water power created by said dam, excepting in small part, could not have been and cannot be utilized at any point sufficiently near to the northerly and southerly line of the dam so that the water could be returned to the river above the head of Island Number Four (4), nor much of it above the head of Island Number Three (3); and this use of the power was made, and the works creating the same were constructed, all without adverse claim or objection of any kind from any person whomsoever, and without any attempt on the part of any landowner or other person to use water power other than as lessee or grantee of the Fox and Wisconsin Improvement Company, or its assigns, other than as aforesaid, until within a few years prior

hereto, when the defendant, The Kaukauna Water Power Company, undertook to use, and made claim to, a part of such power, and the plaintiffs herein now make claim.

That said dam and the canal on the north side of the river and said embankment on lots 5, 6, 7, and 8, were built and have been maintained by the State of Wisconsin and the Fox and Wisconsin Improvement Company and its trustees, and this defendant and the United States, since the time of the building of the same above specified, commenced in 1851, and completed in or about 1855, under and by virtue of the said act of the legislature of Wisconsin, approved August 8, 1848, and other acts relating to said improvement and said grants, and for the uses and purposes specified in said act and other acts relating to the completion of said improvement.

That in the building and maintaining of said dam and
112 embankments and the canal appurtenant to said dam on the north side of said river in said town and range, the State of Wisconsin expended, as nearly as this defendant can ascertain, about the sum of $100,000, about $10,000 of which was expended upon said dam.

And that the Fox and Wisconsin Improvement Company and its trustees, under said trust deed, expended in the enlargement, improvement, completion and maintenance of the same, about the sum of $100,000, about $10,000 of which was expended upon said dam.

And this defendant has expended in the enlargement, improvement, completion and maintenance of the same, about the sum of $20,000, about $3,000 of which was expended upon said dam.

That during all the time since the building of said dam, commenced in 1851, and completed in or about 1855, the State of Wisconsin, the Fox and Wisconsin Improvement Company, its trustees under said trust deed, and this defendant, have notoriously, openly, and in the most public manner, and to the knowledge of all riparian owners on said river, claimed, exercised and proclaimed exclusive dominion and control over, and title to, and ownership of, all the hydraulic power or water power furnished by said dam, and by all other dams on said river built and maintained by them from time to time, and all the time, as each has been successively the owner and holder of the franchises granted to improve the said Fox and Wisconsin rivers; and the right to utilize the same and all thereof on the lands so purchased therefor as aforesaid, and which dominion, control and claim of title and ownership have heretofore been acquiesced in, and not questioned nor interfered with by the defendants or any of the persons through whom they or either of them claim title to the lands bordering on said river, until about five or six years prior to the commencement of this action.

That the moneys expended by the State and Fox and Wisconsin Improvement Company and its trustees, and this defendant, were expended by them during their respective ownerships of said works of improvement upon the faith of their ownership of such hydraulic power.

That in 1854 John Hunt, the then owner of lots six (6) and seven

(7), south of the river, granted to the Fox and Wisconsin Improvement Company, and its legal representatives, the right to erect and forever maintain an embankment of the dimensions as surveyed by the engineers of said company, reserving to himself the right to use said embankment when completed, but not so that the same shall be injured, through lots six (6) and seven (7), in section twenty-two (22) of township twenty-one (21) north, of range eighteen (18) east, on the east or south side of Fox river. Also the privilege of excavating a ditch along the south or east side of said embankment not exceeding three feet in width, and upon the south or east side of the said survey and stakes, as set.

That by the appropriation under said act approved August 8, 1848, and the building and the maintaining of the dam, canal and embankment hereinbefore specified, the State of Wisconsin and the Fox and Wisconsin Improvement Company, and the Green Bay and Mississippi Canal Company, acquired the easement in and to the entire river bed against lot five (5), extending to the thread of the stream against the same, and in and to the entire banks of the same for a dam landing, and site for an embankment to retain the water raised by such dam; and also by such appropriation, building, maintaining, proclamation of right, purchase of lands and utilization of water power, acquired the easement to and exclusive ownership of all of the hydraulic power created by said dam, extension thereof and canal, with the right of use of the same upon the lands which were as aforesaid acquired therefor, or upon such other lands acquired or to be acquired therefor, as the said State and parties claiming under the State, including this defendant, might have selected or may select.

That by the location of said works by the board of public works, and the building of said dam and canal and embankment, and the raising and maintaining of the water held hereby, and by purchase, the Fox and Wisconsin Improvement Company, and the Green Bay and Mississippi Canal Company acquired the right to flow all lands flowed by said dam and embankment.

That in 1875 and 1876 the United States, having made purchase from this defendant, The Green Bay and Mississippi Canal Company, as hereinafter specified, of the works of improvement for purposes of navigation, rebuilt the north and south line or section of said dam at a point on said fractional section 24 about one hundred feet below the old terminus of such north and south line on
113 the north side to a point on lot 5 about fifty feet below the old dam landing, leaving the north and south line and section of the old dam substantially complete, but wholly submerged by new structures.

That said dam, and the embankment leading from the south end of same up and across lots 5, 6 and 7 on the south side of said Fox river has been continually maintained and annually repaired under claim of right by the Fox and Wisconsin Improvement Company from the spring of 1855 to the fall of 1875, and for more than twenty years, and said rebuilt dam has been maintained by the

United States ever since and from the fall of 1875, under claim of right, under deed to it from this defendant, hereinafter described.

That on the 18th day of September, 1872, this defendant made conveyance to the United States, of which a copy is to defendant's original answer herein annexed, marked "A," and made part of this answer. That this defendant retains all the interest in all of said property not transferred to the United States by said conveyance, except that it has leased certain parcels thereof to certain of the parties hereto.

That this defendant has acquired by purchase not only the lands hereinbefore described, but also has so acquired and is the owner of such interests in said Islands Nos. 1, 2, 3 and 4 as are particularly specified in the first subdivision of this answer, which specification is here referred to and made a part of this subdivision of the answer, but which is here omitted to avoid unnecessary repetition; and the lands so owned by this defendant, hereinbefore described, are sufficient in extent to afford mill sites to mills of capacity sufficient to use all of the water power furnished by or at said dam, and all of such power is so situated that it can be used thereon.

But that to confine this defendant, The Green Bay and Mississippi Canal Company, to the use of the water power furnished by said dam "in such a way or manner as that all of the water so taken out" of said mill pond can and will "be returned into the main channel of said river immediately at the foot of said Government dam" (meaning thereby the foot of the north and south line of said dam), would render all of said water power practically valueless to the Green Bay and Mississippi Canal Company, the owners thereof, and to any and all other persons, and so destroy property of value of many thousands of dollars, and prevent the building and operating of mills of value of hundreds of thousands of dollars, and the employment of hundreds of laborers, and the annual manufacture of many thousands of dollars' worth of articles useful to the community, and serve no useful purpose to or for defendants.

That by virtue of the right so acquired by this defendant now answering, it is the owner of all of the water power created by the Government dam in question and has the right to make exclusive use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension to said lock, opposite Island No. 3, and the middle of Island No. 4, where it was contemplated by the board of public works the same should be used.

III.

And for a further and separate defense in bar, and by way of counter-claim thereto, the defendant here answering further says:

That in or about the year 1886 this defendant caused to be brought in the circuit court for Outagamie county, Wisconsin, an action against the Kaukauna Water Power Company, Bradner Smith & Company, James C. Delaney, Charles D. Cassed, David McCartney, James H. Elmore, Joseph Kline, The Milwaukee, Lake Shore &

Western Railway Company, and Badger Paper Company, and B. Aymer Sands, as trustee, defendants, and being all, or nearly all, of the parties under whom the *the* parties in the present action have derived title to the property now claimed by them.

That in the plaintiff's complaint in such action, the facts stated in the second defense of this answer were charged in substance, and charged in connection with facts of which the court takes judicial knowledge, being largely the legislation of Congress and of the State, wherein it was especially charged as follows, to wit: "That the United States has the use and control of said canal, dam and embankments appurtenant" (meaning thereby the Government dam mentioned in the second defense) "and of the water furnished thereby for purposes of navigation only, and this plaintiff
114 has the right to the exclusive use of same and has title to and possession of same for purposes of using all surplus water drawn and to be drawn from said mill pond over and above the amount necessary for use in navigation.

"That this plaintiff also owns vacant lots reaching from said canal to the river below said dam, convenient for use for mills run by hydraulic power drawn from the pond created by said dam, and large enough to make practical use thereon of all the hydraulic power furnished by said dam." And wherein judgment was prayed, among other things, "commanding the defendant, The Kaukauna Water Power Company, to rebuild and restore to its former state and condition the embankment and drain on said south bank of said river upon and across said lot 6," etc. "And also perpetually enjoining and restraining the defendants and all and singular their agents, servants and employés from drawing any water from said mill pond for hydraulic purposes or any other purpose than the ordinary use for agriculture." To this complaint, the defendants, The Kaukauna Water Power Company, Bradner Smith & Company, The Milwaukee, Lake Shore and Western Railway Company and Badger Paper Company put in answer and the issues so joined came on for trial before the court and were duly tried, and the finding of the court thereon filed on the 10th day of March, A. D. 1887, upon which judgment was entered on the same 10th day of March, A. D. 1887, dismissing the plaintiffs' bill of complaint; but on appeal therefrom to the supreme court of Wisconsin, said judgment of the circuit court of Outagamie county was, by judgment of the supreme court of Wisconsin, on the 13th day of December, 1887, reversed and the same thereby remanded to the circuit court with directions to give judgment for the plaintiffs as indicated in the opinion of the supreme court; to which opinion of the supreme court, as reported in volume 70 of Wisconsin Reports, at page 635, reference is here made as a part hereof. That in and by said judgment of the supreme court, it was, among other things, found and adjudged as follows, to wit: "It requires no argument to demonstrate that the water power reserved to the State by section 16 of the act of 1848 was granted to the Fox and Wisconsin Improvement Company by chapter 98, Laws 1853; that the same passed to the plaintiff by the purchase under foreclosure of the trust deed

and mortgage and the conveyance thereof to it by the trustees and mortgagees therein, and that in its conveyance to the United States the plaintiff reserved to itself all of the surplus water power created by the improvement. We conclude, therefore, that whatever rights the State took to the Kaukauna water power by the act of 1848 (which is the absolute ownership of the whole thereof, if that is a valid act) is vested in the plaintiff." That by virtue of this judgment, all of the defendants to said action are concluded, and that the entire water power created by the Government dam in question was thereby declared to be vested in, and the property of, the defendant here answering. As its own property, the defendant here answering has the right to use it where it may and where it will, and especially upon the lands and property designated in its complaint in the action in which the judgment aforesaid was entered.

IV.

And for a further defense in bar, and by way of limitation, the defendant here answering alleges—

That it, this defendant, by itself and by its tenants, has used a large amount—about one-quarter part of the water power furnished by said dam, upon the south or upper half of private claim No. 1, at points from 1,200 to 2,000 feet below the north and south line of the dam, called the Government dam, continuously, and under claim of right and title so to use same, for more than twenty years prior to the commencement of this action, and that it has so used a still larger amount—more than one-half thereof for more than two years prior to the commencement of this action.

Wherefore, the defendant here answering prays judgment of this court—

First, any decree to be entered in this action, determining and adjudicating what share or proportion of the flow of said Fox river where the same passes Islands Nos. 3 and 4, in township 21 north, of range 18 east, is appurtenant, and of right should be permitted to flow in the south, middle and north channels of said river respectively, shall declare and be made subject to the right of the defendant here answering to use all of the water power created by the said Government dam on its own lands on the north side of said river or elsewhere as it shall see fit; and that the ap-
115 portionment of the flow of the river, so to be made, shall be confined to such part of the river, if any, as shall not be so used and shall be permitted to flow in the channel of said river below said dam.

And adjudging that this defendant may have such other judgment, order or relief in the premises as shall be just and equitable. And,

Second, adjudging that the plaintiffs and the Kaukauna Water Power Company pay to this defendant here answering, its costs and disbursements incurred in this action.

B. J. STEVENS,
Attorney for Defendant G. B. & M. C. Co., Madison, Wis.

E. MARINER, *Of Counsel, Milwaukee, Wis.*

116 [Endorsed:] In circuit court, Outagamie county, Wisconsin. Patten Paper Company (Limited) and others, plaintiffs, against The Green Bay & Mississippi Canal Company, impleaded with others, defendants. Amended answer. B. J. Stevens, att'y for G. B. & M. C. Co., Madison, Wis. E. Mariner, of counsel, Milwaukee, Wis. We hereby admit due personal service of the within notice, affidavit, & amended answer this 21st day of August, 1890. Winkler, Flanders, Smith, Bottum & Vilas, att'ys for def't C. & N. W. R'y Co. I have a copy of within & will be present & oppose for def'ts represented by A. L. Cary. Ordway.

[Endorsed:] Cir. court, Outagamie Co. Filed Sep. 29, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

117 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PAPER COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, Charles S. Fairchild, Reese Pulp Company, Bradner Smith & Company, and Albert W. Priest, Defendants.

SIRS: Take notice that upon the annexed affidavit and all papers filed or served in the above-entitled action, application, on the part of the defendant, The Green Bay & Mississippi Canal Company, will be made to the circuit court for Outagamie county, at the adjourned term of said court, to be holden at the court-house in the city of Appleton in said county on the 29th day of August, A. D. 1890, at the opening of court on that day, or as soon thereafter as counsel can be heard, for leave to file and serve herein its amended answer to the plaintiffs' complaint herein, a copy of which amended answer is hereto annexed; and for such other and further order or relief in the premises as shall be equitable and proper.

Yours, etc.,

B. J. STEVENS,
Of Madison, Wis., Attorney.

E. MARINER,
Of Milwaukee, Wis., of Counsel.

To Messrs. Hooper & Hooper, Oshkosh, Wis., attorneys for plaintiffs; D. S. Ordway, Esq., and Alfred L. Cary, Esq., of Milwaukee, Wis., attorneys for the Kaukauna Water Power Company and other defendants; Messrs. Winkler, Smith, Flanders, Bottum & Vilas, of Milwaukee, Wis., attorneys for Chicago & N. W. R'y Co.; P. R. Barnes, Esq., of Oshkosh, Wis., attorney for Reese Pulp Co.

118 In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and Others, Plaintiffs,
vs.
THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded with Others, Defendants.

STATE OF WISCONSIN, *County of Dane,* } *ss:*

B. J. Stevens, of Madison, in said county, being duly sworn, deposes and says: That he is the attorney for the defendant, The Green Bay & Mississippi Canal Company, in the above-entitled action, with E. Mariner, Esq., of Milwaukee, as counsel; and that said defendant's original answer herein was prepared without sufficient opportunity for conference between the attorney and counsel, and hence fails, as he is advised and believes, to sufficiently and properly set up the defenses to the plaintiffs' cause of action had by said defendant, although an attempt thereto was made in said answer; that an amended answer, substantially in the words and figures of the amended answer hereto annexed, was prepared and submitted to the court, with application for leave to file, on the 14th day of July, A. D. 1890, to which D. S. Ordway, Esq., the attorney for certain of defendants, objected, on the ground that no opportunity to inspect the same had been given; and the attorneys for plaintiffs not appearing: whereupon, the court directed notice of application for leave to file to be given, returnable at its adjourned session to be held August 29, A. D. 1890.

B. J. STEVENS.

Subscribed and sworn to before me this 19th day of August, A. D. 1890.

HENRY KESSENICH,
Notary Public, Dane Co., Wis.

119 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PAPER COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARDS, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, Charles S. Fairchild, Reese Pulp Company, Bradner Smith & Company, and Albert W. Priest, Defendants.

The Green Bay & Mississippi Canal Company, one of the defendants named in the above-entitled action, for its amended answer to the plaintiffs' complaint in said action, says:

I.

It admits the allegations of paragraphs 1, 2, 3, 4 and 5 of the complaint, excepting that it has no knowledge or information sufficient to form a belief as to the allegation of paragraph 5, giving the proportion of water passing through the channels between Islands Nos. 4 and 3, and Island No. 3 and the north shore.

It admits paragraph 6 of the complaint, excepting that it does not have any knowledge or information thereof sufficient to form a belief as to the head of water raised by the dam mentioned, nor as to whether, at the time mentioned, Meade and Edwards were the owners of the islands mentioned.

It does not have any knowledge or information sufficient to form a belief as to the allegations of the 7th, 8th and 10th paragraphs.

It admits the allegations of paragraph 9 of the complaint, excepting that it does not have any knowledge or information sufficient to form a belief as to the worth of the pulp mill, whether it can be run or operated without the use of water, nor whether it is worth $15,000 per year as stated.

Upon information and belief it admits the allegations in paragraphs 11 and 12 and admits the allegations of paragraphs 13, 14 and 15, excepting that the pond, described in part as a canal in paragraph 13, extends down to a point below the head of Island No. 3, and a large part of the way in the original bed of said Fox river, and so qualified admits the allegations made, excepting that this defendant, its lessees and tenants, not only propose to continue drawing and passing through said extended pond, or canal, as it is called in the complaint, not only the one-half of the flow of the

river, and called the half appurtenant to the said north channel, but the entire flow of the water of the river if need be.

It admits the allegations of paragraph 16, excepting that it claims a paramount right to the use, if need be, of all of the water power created by the pond above the Government dam, so called, on the north side, if it shall so elect.

120 It does not have any knowledge or information sufficient to form a belief as to the allegations in paragraphs 17, 18 and 19, excepting that it admits that Smith and Erb are trustees in the trust mortgage mentioned.

Upon information and belief it admits the allegations of paragraphs 20 and 21.

It does not have any knowledge or information sufficient to form a belief as to the allegations in paragraphs 22 and 23, excepting that it admits that this defendant is interested in Island No. 3, as therein stated.

It does not have any knowledge or information sufficient to form a belief as to the allegations of paragraphs 24, 25 and 26, excepting that it admits that the defendant here answering is the owner of and interested in Island No. 4, as therein stated.

It admits the allegations of paragraphs 27 and 28, 29 and 30, excepting that it does not know that the Chicago & Northwestern Railway Company is the owner, as therein stated; and it does not have any knowledge or information sufficient to form a belief as to the allegations stated in paragraphs 31 and 32.

II.

And the defendant here answering, for a further and separate defense in bar to the plaintiffs' cause of action, and by way of counter-claim thereto, further shows to the court and says:

That the Fox river is, and within the memory of man always has been, a navigable stream, flowing in nearly a northeasterly course through township number twenty-one (21) north, of range eighteen (18) east, in the county of Outagamie, Wisconsin, and between sections twenty-one (21) and twenty-two (22) south of the river, and section twenty-four (24) and Paul Ducharme's private claim No. 1 and August Grignon's private claim No. 35, north of the river; and where the said river passes between said sections twenty-one (21) and twenty-two (22) south of the river, and said section twenty-four (24) and said private claims Nos. one (1) and thirty-five (35) north of the river, it flows nearly east.

And at the time of the survey by the United States of the lands adjacent to said river at said place, the borders of the same were meandered and defined by meander lines; and the shores of the islands in said river at said place known according to Government survey as Islands Nos. 1, 2, 3 and 4 were also so meandered and defined.

That in the said Fox river below Lake Winnebago, including the place where it passes the above-described sections, there are and always have been rapids and abrupt falls, and any improvement of

the navigation of the river so as to secure slack-water navigation through or by said rapids and falls, would necessarily require the building of dams, locks and canals at great expense.

In order to aid in the improvement of said Fox river, and of the Wisconsin river contiguous thereto, and to connect the same by a canal, and thereby secure great advantage to the commerce of the United States, Congress did, by an act approved August 8, 1846, grant to the State of Wisconsin on its admission into the Union, a large amount of public lands, to wit, many thousands of acres, for the expressed purpose of, and in trust for, improving the navigation of said Fox and Wisconsin rivers.

On the 29th day of June, 1848, the State of Wisconsin, having been admitted into the Union, accepted said grant of land for the uses and purposes expressed in said grant; and by an act of its legislature, approved August 8, 1848, undertook the improvement of the said Fox and Wisconsin rivers, and to make such improvement by means of dams, locks and canals wherever necessary to secure slack-water navigation around rapids and abrupt falls, the sale of said lands, and the application of the proceeds thereof to the said uses for which the same had been granted; and in said act provided for a board of public works to superintend and accomplish the same.

By said last-mentioned act, providing, among other things, as follows, to wit, that "whenever a water power shall be created by reason of any dam erected or other improvements made on any of said rivers, such water power shall belong to the State, subject to the future action of the legislature," the said State of Wisconsin did appropriate to its own use, and the use of its successors and assigns, the water power of the said Fox river, created by dams to be erected in the progress of the work of improving said Fox river.

121 That one of the rapids in said river below Lake Winnebago, around which, as aforesaid, it was necessary to secure slack-water navigation by means of dams, locks and canals, and of which the water power to be created thereat was so appropriated by the State, is located at the point where said Fox river flows between the sections and private claims aforesaid, and is commonly known and hereinafter, in this answer, is designated as the Kaukauna rapids.

Immediately upon the passage of said acts of Congress and of the legislature and in execution of the trust thereby created, the State, through its board of public works, settled upon and adopted a plan for the improvement aforesaid. At this time, the lands on either side of the river at said Kaukauna rapids, together with the islands between, were held and owned by many persons in severalty, single ownerships being confined in each case to narrow frontages on the river; while the ownerships of the islands were, for the most part, separate and distinct from the ownerships of the banks of the river and so continued to be held in severalty until within a few years prior hereto, when some of them became and still are united, as alleged in the complaint. In no case, while so held in severalty, was it practicable to utilize as water power upon the lands

of any single ownership more than an unimportant or fractional part of the flow of the river; and no utilization or occupation as water power of the flow of the river at said locality whatsoever had been made or had, excepting an unimportant power created by a small wing dam, subsequently purchased by the Fox and Wisconsin Improvement Company, as hereinafter mentioned; nor was there any such utilization or occupation as water power other than under the Fox and Wisconsin Improvement Company for nearly a quarter of a century thereafter, nor had there been down to a time only a few years prior to the commencement of this action. That at the time the State began this work of improvement, no person had the right to build a dam across said river, and the State has never authorized any person or corporation to build and maintain a dam across said river at that point save this defendant and its grantors. It was competent for the State and would have worked little damage to the water-power rights of any owner of lands, at that time, to have adopted a plan of improvement whereby a series of dams with locks should have been constructed across the river, one closely succeeding the other, so that boats could have been locked from the level created by one dam, immediately into the level created by the succeeding dam, without any intervening canal; but such dams to have extended across the river, and to have sustained the whole force of the river, must necessarily have been long, strong and expensive. Instead thereof, the State determined upon and adopted the more economical plan or system whereby, as applied to the Kaukauna rapids, it was determined to build a low dam beginning on the south side near the head of the rapids extending downstream on or near the south bank of the river, across lots 8, 7, 6 and onto lot 5 of said section 22; and thence extending at about a right angle with the south bank nearly across the river, leaving an opening at the north end through which the whole water of the river could pass, and into which opening, during the period of construction, a guard-lock (so called) should for safety sake be placed; and thence further extending down the bed of the river parallel to and in part near to and in part on the north bank to a certain point at which should be placed a lock proper, leaving between such last-mentioned extension of the dam and said north bank, a channel sufficiently large to fully pass the ordinary flow of the river; and which dam, by the aid of such lock proper, should uphold and sustain the waters of said river throughout the full extent of said dam at one and the same level; and whereby, at the lower end of the dam so extended and at the foot of the lock aforesaid, it was determined to construct, with locks, a canal on the said north bank, extending downstream and into the river at the foot of the rapids, through which locks and canal, boats could be passed; and around such locks, including the lock at the end of said dam, to construct sluices or sluiceways, through which sluiceways and through said locks and canal, all of the waters of the river, not used on the upper level, in an ordinary stage, could be discharged from level to level into the river below; and thereby the whole rapids at Kaukauna be overcome and a system of slack-

water navigation, by means of such dam, canal and locks, be made to connect the slack water made by the said dam above the rapids with the slack water in the river below; and by which plan it was also contemplated and determined that certain lands should be acquired upon which the water powers created by said dam, canal, locks and sluices should be effectively utilized, and in the manner hereinafter more particularly mentioned.

122 In accordance with such plans so determined upon, the State of Wisconsin in part and its grantee, the Fox and Wisconsin Improvement Company, in part, prior to the fall of 1855, did construct and complete the said improvement at the said Kaukauna rapids in all respects fully as the same was so planned, determined upon and adopted; and did build said dam, with extensions and lock, at the end thereof, at the place and in the manner so contemplated, and without any openings on the south side of the river so as wholly to prevent the use of the water power created by said dam on the south side of the river; and did construct the channel between the lower extension of the dam and the north bank of the river, down to the lock, at the end thereof, of sufficient capacity to pass the ordinary flow of the waters of the river; and did construct with locks a canal extending from the foot of the lock at the end of said dam along the north bank down into the river below said rapids; and build said locks, including the lock at the end of said dam, with sluices or sluiceways around the same, whereby through said canal, locks and said sluiceways all of the waters of said river, in an ordinary stage, could be passed; and partly prior to the fall of 1855, and partly early in 1856, did acquire, by purchase and otherwise, lands for the location of said dam and canal thereon, and particularly for the utilization thereon of the water powers created by said dam and canal, which lands last mentioned lie, and, so far as material to this action, are particularly described as follows, to wit:

All that certain tract or parcel of land situate, lying and being at Kaukauna aforesaid, being part of said fractional section 24 north of the river, and described as follows: Commencing at a point at the upper or western extremity of the canal at Kaukauna aforesaid (meaning thereby the channel or portion of said dam between the lowest extension thereof and the north bank of the river) and twenty feet north of the northerly water line of the canal, running thence down along the bank of said canal and twenty feet distant from the water line as aforesaid, to the northerly line of the south half of private claim No. 1 formerly owned by George W. Lawe, thence following said northerly line of the south half of lot 1 aforesaid, easterly to Fox river at low-water mark; thence upstream along the margin of the Fox river to the upper extremity of the guard-lock at the head of the canal; thence northerly to the place of beginning; such description embracing the towing path on the north side of the canal (not including any buildings or other improvements erected thereon) and all the land within the boundaries aforesaid, lying between said towing path and the Fox river, and including the bed thereof to the middle thread thereof, and includ-

ing a small wing dam theretofore constructed on the bank of said river on such strip of land. Owing to a defect in the title, the interest so acquired in the lands aforesaid, while nominally the whole interest, was in fact only the undivided half interest. And the said State or its grantee, pursuant to and in execution of said plan of improvement, did cause said lands so acquired for the utilization of such water powers to be platted into what were termed water-power or mill lots, all of which lie on the north bank of said river, between said dam and canal on one side and the river on the other, and the greater number of which lie below the head of Island No. 3; and did cause openings or waste weirs, so called, to be inserted in said dam and in the embankments of said canal upon certain of the lots aforesaid for the purpose of utilizing such water powers; and did so construct the same fully in accordance with the plans aforesaid, all of which weirs were so constructed below the head of Island No. 4 and most of them below the head of Island No. 3; and did so acquire said lands for water-power uses as aforesaid, plat the same into mill lots, construct such waste weirs, and did hold out to the world, and did publicly declare that the same were so purchased, platted and prepared for water-power uses, and that such water powers, to wit: all of the powers created by said dam and canal, had been taken and appropriated by the State under said acts of legislation to the use of the State and its grantees, and were claimed to be their exclusive property, and did offer the same for sale or lease, to all persons desiring to purchase or lease the same to be used on said mill lots, and did lease portions of the same, and so did with the knowledge and according to the best of defendant's knowledge, information and belief, with the acquiescence of the said owners of lands on either bank, and of the islands in said river; and ever since then, said Fox and Wisconsin Improvement Company and the grantees and assigns of said State and of said Fox and Wisconsin Improvement Company have continued to so shut off the use of such water power upon and from the south side of the river and to so lease powers on
123 the north side and to so hold out to the world and to so declare, with reference to said mill lots and water powers, and all this with the knowledge, and until about five years prior to the commencement of this action, with like acquiescence or apparent acquiescence of all owners of lands upon the banks of said river and of the islands therein. And this defendant claims that by reason of such acts of legislation and the appropriation thereby made, the construction and maintenance of said dam and canal, the user and claim aforesaid, it has acquired the right under said acts, and by prescription, to keep up and maintain said dam.

Defendant further says that the appropriation of said water powers by the State, including the water powers at Kaukauna, was absolutely necessary in order to prevent the proceeds of the public lands so granted by Congress for the uses aforesaid, from being expended upon dams which should furnish hydraulic power to the private owners of the lands bordering on the banks of said Fox river gratuitously, *i. e.*, without cost to them, and thus work a substantial

diversion of the avails of such expenditures from the uses for which the public lands aforesaid had been granted; and also was absolutely necessary in order to secure a fund, consisting of such water powers and said lands, which should be of market value sufficient for the construction and completion of the said work of improvement so determined upon and adopted. The water powers so appropriated, including the said water powers at Kaukauna, were, and still are, of great value, and the full proceeds of the sale of the same and of the sale of the public lands so granted, together with large sums of money raised by the said Fox and Wisconsin Improvement Company, were applied to the cost of constructing said work of improvement according to said plans so adopted, and together were just sufficient to pay and discharge the full cost of completing the same, all as will hereinafter more fully appear.

The dam and canal in question were constructed, for the most part, by Morgan L. Martin, under a contract made with the State in 1851, which work was continued by the said Martin after the work of improvement had been granted to the Fox and Wisconsin Improvement Company; and were so constructed and finally completed under the act of the legislature of Wisconsin, approved Aug. 8, 1848, and acts of the legislature subsequent thereto, other than which there was no authority for building and maintaining same; and the same were completed in compliance with the report of D. C. Jenne, engineer, mentioned in the act of the legislature, approved October 3, 1856, and in all respects were so constructed and completed as the same remain and now are, excepting as to a slight change in a part of said dam, made by the United States, as hereinafter mentioned.

That on the 6th day of July, 1853, the State of Wisconsin, having found itself unable to fully complete said works of improvement from the grant of lands made by the United States, and the hydraulic powers created by dams built under said act, and having become largely indebted for moneys spent upon such improvement, including the dam and locks above mentioned, and being involved by numerous unfulfilled contracts, payments on which it could not make from funds derived from said grant of lands, or any other funds or property applicable thereto, the said State incorporated the Fox and Wisconsin Improvement Company for the purpose of completing such improvement of said Fox and Wisconsin rivers, and relieving the State of its indebtedness on account of the work theretofore done on the same, and from liability on contracts not then executed. For such purpose the State of Wisconsin granted to the Fox and Wisconsin Improvement Company the works of improvement heretofore mentioned, together with all and singular the rights of way, dams, locks, canals, water power and other appurtenances of said works; also all the rights possessed by the State of demanding and receiving tolls and rents for the same so far as the State possessed or was authorized to grant the same, and all privileges of constructing said work and repairing the same, and all other rights and privileges belonging to such improvement to the same extent

and in the same manner that the State then held, or might exercise such rights by virtue of the acts above referred to.

That such grant was made by chapter 98, of the Laws of 1853, and upon the condition that each of the members of said company should file with the secretary of state a bond, in the sum of $25,000, conditioned to vigorously prosecute the said improvement to completion and complete the same within three years from the passage of said act, and to pay all outstanding evidences of indebted-
124 ness on the part of the State as trustee, or otherwise issued on account of said improvement; and to save harmless the State of Wisconsin from any and all liabilities in anywise arising or growing out of the said improvement, and upon condition that such company should procure releases of all claims and demands against the State of Wisconsin from certain contractors on the Fox and Wisconsin rivers improvement therein named. And that as soon as the bond or bonds and releases referred to should be filed with the secretary of state the said company should be authorized to take possession of said improvement, appurtenances, property and assets thereby granted unto them.

That within the time provided therefor by said act making said grant, the corporators therein named fully complied with the said conditions precedent and filed with the secretary of state the bonds and releases referred to; and that on the 20th day of July, 1853, the secretary of state of Wisconsin made his certificate of the filing of said bonds and releases, and of his approval thereof, whereupon all of said dams, locks, canals, water powers and other appurtenances of said works, and all of said rights, powers and franchises, passed to and vested in the said Fox and Wisconsin Improvement Company.

That among the property which so passed to and vested in the Fox and Wisconsin Improvement Company were the said dam, locks and canals in township 21, range 18, and the hydraulic powers furnished by said dam; that said dam and canal were then partly completed.

That pursuant to the conditions of said grant to said Fox and Wisconsin Improvement Company, and to carry out the intention of the Congress of the United States in making said grant to the State of Wisconsin, the said Fox and Wisconsin Improvement Company proceeded as aforesaid to the entire completion of said works as then contemplated, and as enlarged by acts of legislature of Wisconsin, being chapter 98 of Laws of 1853, and chapter 112 of Laws of 1856, and to that end expended several millions of dollars, and paid on account of State indebtedness of the State of Wisconsin several hundred thousand dollars.

That as this plaintiff is informed and believes, the said Fox and Wisconsin Improvement Company would not have complied with the conditions of said grant and taken title to the property therein named upon the conditions of said grant if they had not believed that they thereby became the owners of the hydraulic powers furnished by said dam, and others of a like character, and whose ownership depended upon the same facts and conditions.

That the said Fox and Wisconsin Improvement Company, in order to raise funds for the completion of said work, and the payment of State indebtedness on account of the same, made its certain mortgage, bearing date August 1, 1853, to Isaac Seymour and William J. Averill, mortgagees in trust, to secure the bonds of said company to the amount of five hundred thousand (500,000) dollars, by which mortgage it mortgaged all the property of said company. And thereafter the company sold and delivered a large number of said bonds, but how many said defendant is unable to state.

That the legislature of Wisconsin, by an act approved October 3, 1856, in order to secure the enlargement and immediate completion of the improvement before mentioned, and the payment of the evidences of indebtedness issued by the State on account of the same, and to enable the Fox and Wisconsin Improvement Company to perform the duties required of it by said act, enacted that within ninety days after the passage of said act said company should make a deed of trust to three trustees of all the unsold lands granted to the State of Wisconsin to aid in the improvement of the Fox and Wisconsin rivers, and all the works of improvement constructed, or to be constructed, on said rivers, and all and singular the rights of way, dams, locks, canals, water powers and other appurtenances of said works, and all rights, privileges, franchises, belonging to said improvement, and all the property of said company, of whatever name and description, for the uses, trusts and purposes named in said act, which were, first, to secure to the State the faithful application of all moneys or property arising from the sale of the lands or water powers, or obtained on the faith of the same, to the construction and completion of the works of improvement contemplated in the said act and as therein provided, being the same works as those specified in said act of Congress making grant of lands to the State of Wisconsin, and to the payment of all outstanding evidences of indebtedness issued by the State on account of said improvement.

That immediately thereafter said act was accepted and
125 ratified by said Fox and Wisconsin Improvement Company, and on the 1st day of December, 1856, said improvement company made its deed of trust to trustees selected and approved pursuant to said act, which said trustees were Alexander Mitchell, Charles Butler, and Alexander Spaulding.

That on the 12th day of December, 1856, the then governor of Wisconsin certified that such deed had been made, and that the same was in conformity to said act. Such deed provided for a further issue of bonds of said company to the amount of one million five hundred thousand (1,500,000) dollars, the proceeds of which should be expended for the purposes specified in said act of October 3, 1856.

That thereafter Alexander Mitchell resigned his position as trustee in said trust deed, and one Moses M. Davis was duly appointed in his place as his successor, and his appointment was ratified by said company.

That in September, 1863, the said Fox and Wisconsin Improvement Company had proceeded with the enlargement of said canal

according to the plan adopted by chapter 289 of Laws of 1861, and sold and issued nearly all of its bonds secured by said trust deed, and the interest had become due and payable upon the same and had not been paid, and the indebtedness of the State, secured by said trust deed, had not been paid.

That thereupon the trustees then holding the estate granted by said trust deed, to wit, Alexander Spaulding, Charles Bulter and Moses M. Davis, proceeded to foreclose said trust deed in the circuit court for the county of Fond du Lac for the purpose of paying the State indebtedness incurred on account of said work, and the principal and interest of the bonds issued under such mortgage to Seymour and Averill, and the principal and interest upon the bonds secured by said trust deed, and to secure a fund for the further enlargement and completion of said improvement according to the provisions of chapter 289, Laws of 1861. Such proceedings were had therein—

That on the 4th day of February, 1864, judgment of foreclosure and sale of all said property under said trust deed was duly entered and recorded in said circuit court for the county of Fond du Lac.

That under and pursuant to said judgment all the lands and property of said company and all its rights, privileges and franchises were sold for the purposes aforesaid.

That on such sale a committee of the persons proposing to become, and who afterwards became, incorporated under chapter 289 of the Laws of 1861, bid in, and thereafter when incorporated as this defendant, took the title to, and by such sale and the confirmation thereof, and the conveyance of trustees under a direction of the court thereunder, this defendant became seized in fee of the works of improvement known as the Fox and Wisconsin improvement, together with all and singular the rights of way, dams, locks, canals and other appurtenances of said works, the right of receiving tolls and rents for the same, and all the privileges of said works, and all other rights, powers and privileges connected with said line of water communication by the State of Wisconsin granted to and vested in the Fox and Wisconsin Improvement Company and its trustees, or either, under and by virtue of the several acts of the legislature of the State of Wisconsin in relation thereto, among which were the acts approved July 6, 1853, March 31, 1855, and October 3, 1856; also all other corporate rights, privileges, franchises, powers and property, real and personal, vested in and belonging to said company, its trustees, or both, forming a part of or in any way connected with said improvement, of whatever name or nature, and from whatever source derived, and all appurtenances thereunto appertaining, including and together with all strips or parcels of lands adjacent to said improvement or the water powers created thereby; also all of the water powers created by and upon the line of, or connected with the work of the Fox and Wisconsin rivers improvement, at whatever points located and wherever situated; also all rights, titles and interests in and to lands or other property acquired, through leases and agreements of all kinds, with reference to said improvement and water powers, including said dam and

canal in township 21, range 18, and all hydraulic power furnished thereby, and the mill lots connected therewith. That the consideration bid for such property by the said committee and paid by the company afterwards organized, to wit, this defendant, was the sum of $191,000.

That out of the same and other moneys arising from the sale of lands granted by Congress as aforesaid, there was paid the amount of $218,178.75 of State indebtedness incurred on account of
126 such improvement, about $50,000 of trust expenses so incurred, and about $130,000 of construction indebtedness so incurred, and the further sum of $43,971.15, the latter being the amount in said suit adjudged necessary to complete the improvement of said Fox and Wisconsin rivers, according to the provisions of chapter 289 of the Laws of 1861, which said sums for State indebtedness and future construction were paid by said committee into the treasury of the State of Wisconsin, or on certificates of State indebtedness surrendered to the State and canceled.

That after said sale to said committee the parties represented by such committee formed a corporation called the Green Bay and Mississippi Canal Company, being this defendant, under and pursuant to said chapter 289 of the Laws of 1861, to wit: on August 15, 1866. That by its articles of association said corporation accepted the rights, powers, privileges, franchises, capacities, immunities, exemptions and burdens granted by and conferred under and imposed by said act and the acts amendatory thereof, and as such corporation received from said trustees, plaintiff in said action, by order of said circuit court of Fond du Lac county, conveyance of said rights, franchises and property, which conveyance was executed on the 18th of August, 1866.

Thereafter, this plaintiff under such conveyance entered into possession of all such property and the exercise of all such franchises, and pursuant thereto spent large sums of money in improving, repairing, preserving and operating said works of improvement, including said dam and canal at the Kaukauna rapids, and the water power connected therewith.

That the expenses of the maintenance of said waterway and improvement largely exceeded the revenues derived therefrom; and that the maintenance of the same appearing to the United States Government to be important to make a competing line of water communication, and for advantage in developing the Northwestern States and the commerce thereof, and to be of importance to the commerce of the nation, and more properly a public than a private enterprise, the Senate and the House of Representatives of the United States passed an act approved July 7, 1870, whereby among other things it was provided that the Secretary of War be authorized to adopt for the improvement of the navigation of the Wisconsin river such plan as might be recommended by the chief Bureau of Engineers, and that said Secretary of War ascertain what sum in justice ought to be paid to the Green Bay and Mississippi Canal Company for all and singular its property and rights of property in said line of water communication, including its locks,

dams, canals and franchises or so much of the same as should in the judgment of said Secretary be needed.

That the legislature of Wisconsin by act approved March 23, 1871, authorized and empowered this defendant to sell and dispose of the rights and property of this defendant to the United States as contemplated by said act of Congress.

That pursuant to such act of Congress a board of arbitrators was selected to appraise such property as therein provided. That such board of arbitrators determined the actual value of such property and rights of property of this defendant in said line of water communication, including its locks, dams, canals, franchises and fixtures attending the operation and repair of the same to be $1,048,070, and that the amount of money realized from the sale of lands heretofore granted by Congress to aid in construction of such line to be deducted from such actual value to be $723,070, leaving a balance of $325,000 to be paid to said company (this defendant) for all such property.

They also appraised the value of defendant's water powers and lots necessary to the enjoyment of same, subject to all rights to use the water for all purposes of navigation, at $140,000; and defendant's fixtures attending the operation and repair of the canals, being dredge-boats and other personal property, said arbitrators appraised at $40,000; same being parcel of the property valued at $1,048,070 and which might be thought not needed for public use. That said board of arbitrators reported their valuation to the Secretary of War. That pursuant to said act of Congress and the report of such arbitrators, the Secretary of War made his report to Congress that said property was of the value of $325,000. That the value of the water powers and lots necessary to the enjoyment of the same, subject to all rights to use the water for all purposes of navigation, was $140,000, including the franchise to use same. That the value of the personal property of said company was $40,000. That
127 in his opinion the personal property valued at $40,000, and the franchises of said corporation, to wit, the water powers created by the dams and the lots necessary to the enjoyment of the same, subject to all rights to use the water for all purposes of navigation, were not required for purposes of navigation, and were therefore not needed by the United States.

That thereupon Congress made an appropriation by act approved January 10, 1872, for the purchase of the rights and property of said company, reported by said Secretary of War to be needed for the purposes of navigation, of $145,000, which sum was paid to this company on or about the 18th day of September, 1872. Whereupon this defendant conveyed to the United States of America certain of its franchises and property, as appears by its deed, the material parts of which appear in Schedule "A," hereto or to this defendant's original answer annexed.

That this defendant is the owner of and entitled to the exclusive use and control of the water power or hydraulic power, supported, maintained, and furnished by the above-mentioned dam across Fox river, subject only to the right of the United States Government to

draw only so much water therefrom as is necessary to fill the canal on the north side of said river, leading from the pond above said dam to the river below said dam, for the purposes of navigation only, as specified in said conveyance from this defendant to the United States.

That the United States has the use and control of said dam, canal and embankments appurtenant and of the waters therein for purposes of navigation only, and this defendant has the right to the exclusive use of same, and has title to and possession of the same for the purposes of using all surplus water drawn and to be drawn from said pond above said dam over and above the amount necessary for use in navigation.

That this defendant also owns the said lots of land, lying between the said dam and canal and the river and reaching from said dam and canal to the river, acquired for the use of mills run by hydraulic power, as hereinbefore mentioned, and called mill lots; and that the same are sufficient in all ways to make practical use thereon of all hydraulic power furnished by said dam.

That the use of said surplus water drawn and to be drawn from said pond is of great value to this defendant, to wit, of the value of $250,000, to be used on defendant's lots as aforesaid, and on such other lands and lots as defendant may purchase, or as defendant may lease water to be used upon.

That the water power created as aforesaid came to be used in some degree soon after the completion of the aforesaid dam and canal, and in increasing degree ever since then has been used, until now, at this time, when a large part thereof is utilized, and the greater part of the same is so utilized upon that portion of the lands so purchased by the State or its grantee, the Fox and Wisconsin Improvement Company, lying between the said dam and canal on one side, and the river on the other; that said water power created by said dam, excepting in small part, could not have been and cannot be utilized at any point sufficiently near to the northerly and southerly line of the dam so that the water could be returned to the river above the head of Island Number Four (4), nor much of it above the head of Island Number Three (3); and this use of the power was made, and the works creating the same were constructed, all without adverse claim or objection of any kind from any person whomsoever, and without any attempt on the part of any landowner or other person to use water power other than as lessee or grantee of the Fox and Wisconsin Improvement Company, or its assigns, other than as aforesaid, until within a few years prior hereto, when the defendant, The Kaukauna Water Power Company, undertook to use, and made claim to, a part of such power, and the plaintiffs herein now make claim.

That said dam and the canal on the north side of the river and said embankment on lots 5, 6, 7, and 8, were built and have been maintained by the State of Wisconsin and the Fox and Wisconsin Improvement Company and its trustees, and this defendant and the United States, since the time of the building of the same above specified, commenced in 1851, and completed in or about 1855, under

and by virtue of the said act of the legislature of Wisconsin, approved August 8, 1848, and other acts relating to said improvement and said grants, and for the uses and purposes specified in said act and other acts relating to the completion of said improvement.

That in the building and maintaining of said dam and
128 embankments and the canal appurtenant to said dam on the north side of said river in said town and range, the State of Wisconsin expended, as nearly as this defendant can ascertain, about the sum of $100,000, about $10,000 of which was expended upon said dam.

And that the Fox and Wisconsin Improvement Company and its trustees, under said trust deed, expended in the enlargement, improvement, completion and maintenance of the same, about the sum of $100,000, about $10,000 of which was expended upon said dam.

And this defendant has expended in the enlargement, improvement, completion and maintenance of the same, about the sum of $20,000, about $3,000 of which was expended upon said dam.

That during all the time since the building of said dam, commenced in 1851, and completed in or about 1855, the State of Wisconsin, the Fox and Wisconsin Improvement Company, its trustees under said trust deed, and this defendant, have notoriously, openly, and in the most public manner, and to the knowledge of all riparian owners on said river, claimed, exercised and proclaimed exclusive dominion and control over, and title to, and ownership of, all the hydraulic power or water power furnished by said dam, and by all other dams on said river built and maintained by them from time to time, and all the time, as each has been successively the owner and holder of the franchises granted to improve the said Fox and Wisconsin rivers; and the right to utilize the same and all thereof on the lands so purchased therefor as aforesaid, and which dominion, control and claim of title and ownership have heretofore been acquiesced in, and not questioned nor interfered with by the defendants or any of the persons through whom they or either of them claim title to the lands bordering on said river, until about five or six years prior to the commencement of this action.

That the moneys expended by the State and Fox and Wisconsin Improvement Company and its trustees, and this defendant, were expended by them during their respective ownerships of said works of improvement upon the faith of their ownership of such hydraulic power.

That in 1854 John Hunt, the then owner of lots six (6) and seven (7), south of the river, granted to the Fox and Wisconsin Improvement Company, and its legal representatives, the right to erect and forever maintain an embankment of the dimensions as surveyed by the engineers of said company, reserving to himself the right to use said embankment when completed, but not so that the same shall be injured, through lots six (6) and seven (7), in section twenty-two (22) of township twenty-one (21) north, of range eighteen (18) east, on the east or south side of Fox river. Also the privilege of excavating a ditch along the south or east side of said embankment not exceed-

ing three feet in width, and upon the south or east side of the said survey and stakes, as set.

That by the appropriation under said act approved August 8, 1848, and the building and the maintaining of the dam, canal and embankment hereinbefore specified, the State of Wisconsin and the Fox and Wisconsin Improvement Company, and the Green Bay and Mississippi Canal Company, acquired the easement in and to the entire river bed against lot five (5), extending to the thread of the stream against the same, and in and to the entire banks of the same for a dam landing, and site for an embankment to retain the water raised by such dam; and also by such appropriation, building, maintaining, proclamation of right, purchase of lands and utilization of water power, acquired the easement to and exclusive ownership of all of the hydraulic power created by said dam, extension thereof and canal, with the right of use of the same upon the lands which were as aforesaid acquired therefor, or upon such other lands acquired or to be acquired therefor, as the said State and parties claiming under the State, including this defendant, might have selected or may select.

That by the location of said works by the board of public works, and the building of said dam and canal and embankment, and the raising and maintaining of the water held hereby, and by purchase, the Fox and Wisconsin Improvement Company, and the Green Bay and Mississippi Canal Company acquired the right to flow all lands flowed by said dam and embankment.

That in 1875 and 1876 the United States, having made purchase from this defendant, The Green Bay and Mississippi Canal Company, as hereinafter specified, of the works of improvement for purposes of navigation, rebuilt the north and south line or section of said dam at a point on said fractional section 24 about one hundred feet below the old terminus of such north and south line on
129 the north side to a point on lot 5 about fifty feet below the old dam landing, leaving the north and south line and section of the old dam substantially complete, but wholly submerged by new structures.

That said dam, and the embankment leading from the south end of same up and across lots 5, 6 and 7 on the south side of said Fox river has been continually maintained and annually repaired under claim of right by the Fox and Wisconsin Improvement Company from the spring of 1855 to the fall of 1875, and for more than twenty years, and said rebuilt dam has been maintained by the United States ever since and from the fall of 1875, under claim of right, under deed to it from this defendant, hereinafter described.

That on the 18th day of September, 1872, this defendant made conveyance to the United States, of which a copy is to defendant's original answer herein annexed, marked "A," and made part of this answer. That this defendant retains all the interest in all of said property not transferred to the United States by said conveyance, except that it has leased certain parcels thereof to certain of the parties hereto.

That this defendant has acquired by purchase not only the lands

hereinbefore described, but also has so acquired and is the owner of such interests in said Islands Nos. 1, 2, 3 and 4 as are particularly specified in the first subdivision of this answer, which specification is here referred to and made a part of this subdivision of the answer, but which is here omitted to avoid unnecessary repetition; and the lands so owned by this defendant, hereinbefore described, are sufficient in extent to afford mill sites to mills of capacity sufficient to use all of the water power furnished by or at said dam, and all of such power is so situated that it can be used thereon.

But that to confine this defendant, The Green Bay and Mississippi Canal Company, to the use of the water power furnished by said dam "in such a way or manner as that all of the water so taken out" of said mill pond can and will "be returned into the main channel of said river immediately at the foot of said Government dam" (meaning thereby the foot of the north and south line of said dam), would render all of said water power practically valueless to the Green Bay and Mississippi Canal Company, the owners thereof, and to any and all other persons, and so destroy property of value of many thousands of dollars, and prevent the building and operating of mills of value of hundreds of thousands of dollars, and the employment of hundreds of laborers, and the annual manufacture of many thousands of dollars' worth of articles useful to the community, and serve no useful purpose to or for defendants.

That by virtue of the right so acquired by this defendant now answering, it is the owner of all of the water power created by the Government dam in question and has the right to make exclusive use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension to said lock, opposite Island No. 3, and the middle of Island No. 4, where it was contemplated by the board of public works the same should be used.

III.

And for a further and separate defense in bar, and by way of counter-claim thereto, the defendant here answering further says:

That in or about the year 1886 this defendant caused to be brought in the circuit court for Outagamie county, Wisconsin, an action against the Kaukauna Water Power Company, Bradner Smith & Company, James C. Delaney, Charles D. Cassed, David McCartney, James H. Elmore, Joseph Kline, The Milwaukee, Lake Shore & Western Railway Company, and Badger Paper Company, and B. Aymer Sands, as trustee, defendants, and being all, or nearly all, of the parties under whom the *the* parties in the present action have derived title to the property now claimed by them.

That in the plaintiff's complaint in such action, the facts stated in the second defense of this answer were charged in substance, and charged in connection with facts of which the court takes judicial knowledge, being largely the legislation of Congress and of the State, wherein it was especially charged as follows, to wit: "That the United States has the use and control of said canal, dam and

embankments appurtenant" (meaning thereby the Government dam mentioned in the second defense) "and of the water furnished thereby for purposes of navigation only, and this plaintiff
130 has the right to the exclusive use of same and has title to and possession of same for purposes of using all surplus water drawn and to be drawn from said mill pond over and above the amount necessary for use in navigation.

"That this plaintiff also owns vacant lots reaching from said canal to the river below said dam, convenient for use for mills run by hydraulic power drawn from the pond created by said dam, and large enough to make practical use thereon of all the hydraulic power furnished by said dam." And wherein judgment was prayed, among other things, "commanding the defendant, The Kaukauna Water Power Company, to rebuild and restore to its former state and condition the embankment and drain on said south bank of said river upon and across said lot 6," etc. "And also perpetually enjoining and restraining the defendants and all and singular their agents, servants and employés from drawing any water from said mill pond for hydraulic purposes or any other purpose than the ordinary use for agriculture." To this complaint, the defendants, The Kaukauna Water Power Company, Bradner Smith & Company, The Milwaukee, Lake Shore and Western Railway Company and Badger Paper Company put in answer and the issues so joined came on for trial before the court and were duly tried, and the finding of the court thereon filed on the 10th day of March, A. D. 1887, upon which judgment was entered on the same 10th day of March, A. D. 1887, dismissing the plaintiffs' bill of complaint; but on appeal therefrom to the supreme court of Wisconsin, said judgment of the circuit court of Outagamie county was, by judgment of the supreme court of Wisconsin, on the 13th day of December, 1887, reversed and the same thereby remanded to the circuit court with directions to give judgment for the plaintiffs as indicated in the opinion of the supreme court; to which opinion of the supreme court, as reported in volume 70 of Wisconsin Reports, at page 635, reference is here made as a part hereof. That in and by said judgment of the supreme court, it was, among other things, found and adjudged as follows, to wit: "It requires no argument to demonstrate that the water power reserved to the State by section 16 of the act of 1848 was granted to the Fox and Wisconsin Improvement Company by chapter 98, Laws 1853; that the same passed to the plaintiff by the purchase under foreclosure of the trust deed and mortgage and the conveyance thereof to it by the trustees and mortgagees therein, and that in its conveyance to the United States the plaintiff reserved to itself all of the surplus water power created by the improvement. We conclude, therefore, that whatever rights the State took to the Kaukauna water power by the act of 1848 (which is the absolute ownership of the whole thereof, if that is a valid act) is vested in the plaintiff." That by virtue of this judgment, all of the defendants to said action are concluded, and that the entire water power created by the Government dam in question was thereby declared to be vested in, and the property of, the de-

fendant here answering. As its own property, the defendant here answering has the right to use it where it may and where it will, and especially upon the lands and property designated in its complaint in the action in which the judgment aforesaid was entered.

IV.

And for a further defense in bar, and by way of limitation, the defendant here answering alleges—

That it, this defendant, by itself and by its tenants, has used a large amount—about one-quarter part of the water power furnished by said dam, upon the south or upper half of private claim No. 1, at points from 1,200 to 2,000 feet below the north and south line of the dam, called the Government dam, continuously, and under claim of right and title so to use same, for more than twenty years prior to the commencement of this action, and that it has so used a still larger amount—more than one-half thereof for more than two years prior to the commencement of this action.

Wherefore, the defendant here answering prays judgment of this court—

First, any decree to be entered in this action, determining and adjudicating what share or proportion of the flow of said Fox river where the same passes Islands Nos. 3 and 4, in township 21 north, of range 18 east, is appurtenant, and of right should be permitted to flow in the south, middle and north channels of said river respectively, shall declare and be made subject to the right of the defendant here answering to use all of the water power created by the said Government dam on its own lands on the north side of said river or elsewhere as it shall see fit; and that the ap-
131 portionment of the flow of the river, so to be made, shall be confined to such part of the river, if any, as shall not be so used and shall be permitted to flow in the channel of said river below said dam.

And adjudging that this defendant may have such other judgment, order or relief in the premises as shall be just and equitable. And,

Second, adjudging that the plaintiffs and the Kaukauna Water Power Company pay to this defendant here answering, its costs and disbursements incurred in this action.

B. J. STEVENS,
Attorney for Defendant G. B. & M. C. Co., Madison, Wis.

E. MARINER,
Of Counsel, Milwaukee, Wis.

132 [Endorsed:] In circuit court, Outagamie county, Wisconsin. Patten Paper Company (Limited) and others, plaintiffs, against The Green Bay & Mississippi Canal Company, impleaded with others, defendants. Amended answer. B. J. Stevens, att'y for G. B. & M. C. Co., Madison, Wis. E. Mariner, of counsel, Milwaukee, Wis. Due personal service of within notice, aff'd't, & amended answer

admitted this 21st day of August, 1890. Moses Hooper, Hooper & Hooper, pl'ffs' att'ys. P. R. Barnes, att'y for def't Reese Pulp Co.

[Endorsed:] Cir. court, Outagamie Co. Filed Sep. 29, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

133 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PAPER COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARDS, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, *Margaret G. Kelso*, Charles S. Fairchild, Reese Pulp Company, Bradner Smith & Company, and Albert W. Priest, Defendants.

The application in the above-entitled action of The Green Bay & Mississippi Canal Company, defendant therein, for leave to file and serve its amended answer to the plaintiffs' complaint therein coming on to be heard by this court on the 29th day of August, 1890, at the court-house, in the city of Appleton, in said county, and after
134 reading the proposed amended answer and the affidavit of B. J. Stevens attached to the notice of such application and all the papers filed and served in said action, and it appearing that due service of said notice was made upon the attorneys for the plaintiffs and the attorneys for all of the defendants who have appeared in said action, and after hearing B. J. Stevens, attorney, and E. Mariner, of counsel, for the Green Bay & Mississippi Canal Company, in favor of such application, and D. S. Ordway, as attorney for The Kaukauna Water Power Company and others, defendants, by him and Alfred L. Cary, Esq., represented, in opposition thereto, the attorney for plaintiffs consenting to the filing of the same and the attorneys for the other of said defendants not appearing at such hearing, and the court being sufficiently advised of its opinion in the premises:

Now, therefore, on motion of B. J. Stevens, attorney, and E. Mariner, of counsel, for the Green Bay & Mississippi Canal Company—

It is ordered that The Green Bay & Mississippi Canal Company, defendant, have leave to file and serve its said amended answer to

the plaintiffs' complaint herein, but with leave to the plaintiffs or any of the defendants herein to move that irrelevant or redundant matter be stricken out therefrom if they shall be so advised.

It is further ordered that the defendant Green Bay & Mississippi Canal Company, as a condition for such leave to file and serve answer, do pay the sum of ten dollars ($10) costs to D. S. Ordway, Esq., for the defendants represented by him and Alfred L. Cary, Esq., as attorneys.

Dated Appleton, September 29th, 1890.

By the court:

GEO. H. MYERS, *Judge.*

Endorsement: Circuit court, Outagamie county. Patten
135 Paper Co. (L'm't'd) *et al.*, pl'ffs, *vs.* Kaukauna Water Power Co. *et al.*, def'ts. Order granting leave to Green Bay & Miss. Canal Co. to file amended answer. Cir. court, Outagamie Co. Filed in open court Sep. 29, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

136 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

Whereas on the 29th day of September, 1890, an order was made in the above action allowing the Green Bay and Mississippi Canal Company to file and serve an amended answer therein; which said order as well as the amended answer allowed thereby to be filed and served contained errors in the entitling thereof—that is to say, in the names of both plaintiffs and defendants; one of the plaintiffs, to wit, The Union Pulp Company, was by mistake named therein The Union Paper Company, and by a similar mistake there was included therein the names of George F. Kelso, George W. Kelso, and Margaret G. Kelso, whose interests in said cause had passed to the Reese Pulp Company before the making of said order, and there was also by similar mistake included in said amended answer and order as defendants in said cause Bradner, Smith & Company and

Albert W. Priest, who never were defendants in said action: Now, on motion of Breese J. Stevens, Esq., attorney for said defendant, Green Bay and Mississippi Canal Company, it is ordered that the title of said amended answer be corrected in the respects aforesaid, and that said order of date September 29th, 1890, be, and the same hereby is, vacated and set aside, and the following order is hereby made and entered in the place and stead thereof, only changing said order of September 29th as to its entitling, viz:

137 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

The application in the above-entitled action of The Green Bay & Mississippi Canal Company, defendant therein, for leave to file and serve its amended answer to the plaintiffs' complaint therein coming on to be heard by this court on the 29th day of August, 1890, at the court-house in the city of Appleton, in said county, and after reading the proposed amended answer and the affidavit of B. J. Stevens, attached to the notice of such application, and all the papers filed and served in said action, and it appearing that due service of said notice was made upon the attorneys for the plaintiffs and the attorneys for all of the defendants who have appeared in said action, and after hearing B. J. Stevens, attorney, and E. Mariner, of counsel, for the Green Bay & Mississippi Canal Company, in favor of such application, and David S. Ordway, as attorney for The Kaukauna Water Power Company and others, defendants, by him and Alfred L. Cary, Esq., represented, in opposition thereto, and the attorney for plaintiffs consenting to the filing of the same and the attorneys for the other of said defendants not appearing at such hearing, and the court being sufficiently advised of its opinion in the premises:

Now, therefore, on motion of B. J. Stevens, attorney, and E. Mariner, of counsel, for the Green Bay & Mississippi Canal Company—

It is ordered that The Green Bay & Mississippi Canal Company, defendant, have leave to file and serve its said amended answer to

the plaintiffs' complaint herein, but with leave to the plaintiffs or any of the defendants herein to move that irrelevant or redundant matter be stricken out therefrom if they shall be so advised.

It is further ordered that the defendant Green Bay & Mississippi Canal Company, as a condition for such leave to file and serve answer, do pay the sum of ten dollars ($10) costs to David S. Ordway, Esq., for the defendants represented by him and Alfred L. Cary, Esq., as attorneys.

Dated Appleton, November 28th, 1890.

By the court:

GEO. H. MYERS,
Circuit Judge.

138 Without waiving any objections to the foregoing order as to its merits, and hereby expressly reserving all rights of appeal therefrom, we hereby consent to the entry thereof.

ALFRED L. CARY,
Attorney for Defendants Kaukauna Water Power Company and Others, for Whom He Has Appeared Herein.
WINKLER, FLANDERS, SMITH, B. & V.,
Att'ys for C. & N. W. R'y Co.
—— ——, *Att'y for Reese Pulp Co.*

Endorsement: In circuit court, Outagamie county. Patten Paper Company (Limited), Union Pulp Company, & Fox River Pulp & Paper Company, plaintiffs, against Kaukauna Water Power Co., Matthew J. Meade, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, *et al.*, defendants. Order vacating order of Sept. 29, 1890, and allowing amended answer of The Green Bay & Miss. Canal Co. to be filed and served. Cir. court, Outagamie Co. Filed in open court Nov. 28, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. 10. 568. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

139 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

To Breese J. Stevens, Esq., attorney for said defendant, Green Bay and Mississippi Canal Company, and A. L. Smith, Esq., clerk of the aforesaid court:

Please take notice that The Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, part of the defendants in the above-entitled action, appeal to the supreme court of the State of Wisconsin from the order made and entered by the above-named court herein on the twenty-eighth day of November, A. D. 1890, granting leave to the said Green Bay and Mississippi Canal Company to file and serve an amended answer to the plaintiffs' complaint — said action, and that said appeal is from the whole of said order.

Yours, etc., ALFRED L. CARY,
Attorney for said Defendants, Who Appeal as Above Stated.

Above notice served on me Dec. 1, 1890, and all undertakings and deposit waived, and Kaukauna W. P. Co. and other defendants represented by Mr. Cary who appeal may, if defeated in supreme court or their appeal is dismissed, have 20 days after the remittitur is returned to and filed in the circuit court in which to move that irrelevant or redundant matter be stricken out therefrom or to demur or answer to the same, and an order without further notice may be entered by the circuit court to that effect.

BREESE J. STEVENS,
Att'y for the G. B. & Miss. Canal Co.
E. MARINER,
Of Counsel for Same.

140 Served on me and filed this 2nd day of December, 1890.
A. L. SMITH, *Clerk,*
By A. M. SMITH, *Deputy.*

Endorsement: Circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company, Green Bay & Miss. Canal Company, *et al.*, defendants. Notice of appeal by K. W. P. Co. to sup. court from order allowing. Cir. court, Outagamie Co. Filed Dec. 2, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

141 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARS, *et al.*

STATE OF WISCONSIN, } ss:
Outagamie County, }

I, A. L. Smith, clerk of the circuit court in and for said county, do hereby certify that the annexed and foregoing papers are the original order appealed from herein and all the original papers used by each party upon the application for said order, and the same are herewith transmitted to the clerk of the supreme court of Wisconsin pursuant to the annexed notice of appeal and the direction of the attorneys so appealing.

In testimony whereof I have hereunto set my hand and affixed the seal of said court this 3rd day of December, A. D. 1890.

[SEAL.]

A. L. SMITH, *Clerk,*
By A. M. SMITH, *Deputy.*

Endorsement: Filed Dec. 5, 1890. Clarence Kellogg, clerk of supreme court Wis. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

142 And afterwards, to wit, on the 17th day of March, 1891, the same being the twenty-eighth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

PATTEN PAPER COMPANY (LIMITED), UNION Pulp Company, Fox River Pulp and Paper Company, and Green Bay & Mississippi Canal Company, Respondents,
vs.
KAUKAUNA WATER POWER COMPANY, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, Impleaded, etc., Appellants.

Appeal from Circuit Court of Outagamie County, Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on

consideration whereof it is now here ordered and adjudged by this court that the appeal in this cause be, and the same is hereby, dismissed with costs against the said appellants, taxed at the sum of fifty-one and fifty one-hundredths (51.50) dollars.

143 Upon announcing the foregoing decision, the court, by Chief Justice Cole, rendered its opinion in the words and figures following—that is to say:

144 PATTEN PAPER COMPANY (LIMITED) *et al.*, Respondents,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Appellants.

This is an appeal from an order allowing the Green Bay and Mississippi Canal Company to file an amended answer in this cause. The original answer was filed without objection, the order appealed from reserving to the plaintiffs or any defendants the right of moving to strike out any irrelevant or redundant matter in the amended answer. The case was here on a former appeal. (See 70 Wis., 659.) The action is brought to settle the rights of the parties in a water power on Fox river in which the Green Bay and Mississippi Canal Company is interested, and it was therefore made a defendant. Such corporation filed its original answer, which the appellants agreed and stipulated might stand "and be answered or demurred to the same and with the same effect as if accompanied by or as if it were in form a cross-bill or cross-complaint setting up formally the same matters stated in said answer, and that the answer may be treated and considered by the other parties who have filed an answer as if accompanied by a cross-complaint in a due form." Afterwards the amended answer was filed on leave granted.

It is objected that the court erred in allowing the amended answer to be filed because it states no defense to the cause of action stated in the complaint. The amended answer is but little more than an enlargement or expansion of the matter stated in the original answer, which the appellants, in effect, consented might be filed.

There may be some additional defensible matters in it. It
145 is very lengthy, and, after reading it carefully more than once, I do not feel safe in asserting what it does or does not contain. It is largely devoted to giving a history of the improvement company, the legislation of the State in regard to that work, the steps taken to execute it, and the means by or through which the canal company acquired its interest in the water power. There may be irrelevant or redundant matter in the amended answer, but, if so, any party prejudiced by it can move to strike it out. We decline at this time to consider the sufficiency of any defense set up in it or in the original answer. All such questions may more properly be determined on a demurrer to the answer. We are inclined to hold, upon the facts, that there was no abuse of discretion on the part of the circuit court in permitting the amended answer to be filed, and therefore that the order is not appealable. This is

the general rule as to discretionary orders unless there is an abuse of discretion.

The appeal is dismissed.

(Endorsements:) No. 62. *In* Patten Paper Co. (Limited) *et al.*, respondents, *vs.* Kaukauna Water Power Company *et al.*, appellants. Opinion. Cole, C. J. Filed March 17, 1891. Clarence Kellogg, clerk of supreme court Wis.

146 Thereupon this court issued its remittitur to the court below in the words and figures following:

147 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the thirteenth day, of January, A. D. 1891, on the twenty-eighth day of the term, to wit, on the seventh day of March, A. D. 1891—present, Orsamus Cole, chief justice, and William P. Lyon, Harlow S. Orton, David Taylor, and John B. Cassoday, associate justices of said court—the following proceedings were had, *inter alia*, to wit:

PATTEN PAPER COMPANY (LIMITED) and Union Pulp Company and Fox River Pulp & Paper Company, Plaintiffs; Green Bay and Mississippi Canal Co., Respondent, *vs.* KAUKAUNA WATER POWER CO., MATTHEW J. Meade, Harriet S. Edwards, Mil., Lake Shore & Western R'y Co., G. Lind, Joseph Carlson, Brokaw Pulp Co., Badger Paper Co., B. Aymar Sands, Joseph Kline, & Michael A. Hunt, Impl'd, &c., Appellants.	Appeal from Circuit Court, Outagamie County, State of Wisconsin.

This cause came on to be heard on appeal from the order of the circuit court of Outagamie county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the appeal in this cause be, and the same is hereby, dismissed with costs against the said appellants, taxed at the sum of fifty-one & $\frac{50}{100}$ dollars ($51.50).

STATE OF WISCONSIN, *Supreme Court*, } ss:

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom.

In testimony whereof I have hereunto set my hand and [SEAL.] affixed the seal of said court, at Madison, this seventeenth day of May, A. D. 1891.

(Signed) CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Green Bay & Miss. Canal Co., respondent, against Kaukauna Water Power Co. *et al.*, appellants. Remittitur. Cir. court, Outagamie Co. Filed May 21, 1891. H. J. Mulholland, clerk. Cir. court, Outagamie Co. Filed May 21, 1891. H. J. Mulholland, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

148 And thereupon the following further proceedings were had in this same cause in this same court:

Pleas before the supreme court of the State of Wisconsin, at a term thereof begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, the eighth day, of January, A. D. 1895.

Present: Harlow S. Orton, chief justice; John B. Cassoday, John B. Winslow, Silas U. Pinney, and Alfred W. Newman, justices; Clarence Kellogg, clerk.

Be it remembered that heretofore, to wit, on the 26th day of June, in the year of our Lord one thousand eight hundred and ninety-four, came into the office of the clerk of the supreme court of the State of Wisconsin:

First. Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company.

Second. Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt; and

Third. Henry Hewitt, Jr., & William P. Hewitt; and filed in said court their several respective certain notices of appeals and undertakings and waivers thereof, according to the statute in such case made and provided, and also the return to such appeals of the clerk of the superior court of Milwaukee county, in said State, the said return consisting of all of the returns hereto annexed herein stated as made on the several foregoing appeals and of a further return in the words and figures following—that is to say:

149 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Henry D. Smith, Michael Kline, Herman Erb, Asel W. Patten, George W. Kelso, Margaret G. Kelso, and Charles S. Fairchild, Defendants.

An appeal by the above-named Kaukauna Water Power Company and certain other defendants represented by Alfred L. Cary, Esq., having been taken to the supreme court and perfected upon the 2nd day of December, 1890, and the respondent in said appeal, The Green Bay and Mississippi Canal Company, having consented that said appellants may, if defeated in the supreme court or if their appeal is dismissed, have twenty days after the remittitur is returned to and filed in this court in which to move that irrelevant or redundant matter be stricken out from said amended answer or in which to demur to or answer the same:

Now, on motion of Alfred L. Cary, Esq., attorney for said Kaukauna Water Power Company and others—

It is ordered that all proceedings (excepting the taking of testimony) in this action be stayed until 20 days after the return to this court of the record on appeal and the filing of the remittitur from the supreme court, and that said Kaukauna Water Power Company and others, appellants, may have twenty days after the remittitur is returned to and filed in this court in which to move that irrelevant or redundant matter be stricken out from said amended answer or in which to demur to or answer the same.

Dated Dec. 2nd, 1890.

By the court:

GEO. H. MYERS, *Judge.*

Endorsement: In circuit court, Outagamie county. Patten Paper Co., Limited, *et al. v.* Kaukauna W. P. Co. *et al.*, defendants. Order staying proceedings pending appeal, &c. Cir. court, Outagamie Co. Filed Dec. 1, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis. 10–575.

150 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

The State of Wisconsin to the said defendants and each of them:

You are hereby summoned to appear within twenty days after service of this summons, exclusive of the day of service, and defend the above-entitled action in the court aforesaid; and in case of your failure so to do judgment will be rendered against you according to the demand of the complaint, of which a copy is herewith served upon you.

MOSES HOOPER,
Plaintiffs' Attorney.

P. O. address, Oshkosh, Winnebago county, Wis.

151 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

Plaintiffs complain of defendants for this:

Corporate Character.

1st. That the plaintiffs are corporations created by and existing under the laws of State of Wisconsin.

That the defendants Kaukauna Water Power Company, Milwaukee, Lake Shore and Western Railway Company, The Green Bay and Mississippi Canal Company, The Kaukauna Paper Company, The American Pulp Company, The Chicago & Northwestern Railway Company, The Brokan Pulp Company, and The Badger Paper Company are corporations created by and existing under the laws of the State of Wisconsin.

Location.

2nd. That the Fox river is a public river. That it flows nearly west, southwest through township No. 21, north of range No. 18 east, of 4th principal meridian in Outagamie county, Wisconsin. That it flows between sections 21 and 22 south of the river, and section 24 and P. Ducharme's private claim No. 1 and Augustin Grignon's private claim No. 35 north of the river.

Flow of River.

3rd. That such Fox river where it passes through such township is of large volume, having a flow of about three hundred thousand cubic feet of water per minute during the ordinary stage of water in same.

Islands.

4th. That where said river passes between said sections 21 and 22 south of river, and section 24 and said private claims north of the river, it is divided into several separate channels by four islands, each of which was surveyed by the United States at time of the Government survey, of said township 21, of range 18, and the contents or area of each of which was returned with the survey and plat of said township to the General Land Office of the United States. That such islands were numbered 1, 2, 3, and 4 in such survey; and were returned as containing, No. 1, six $\frac{72}{100}$ acres of land; No. 2, two and $\frac{2}{100}$ acres of land; No. 3, ten and $\frac{20}{100}$ acres of land, and No. 4 twenty-two and $\frac{53}{100}$ acres of land. That each of said islands was in 1835 sold by the United States as containing said amounts of land, and conveyed by Government patent. That the upper island is No. 4, which is about one hundred and thirty-five rods long with the stream. That this island lays next to the south shore of the river and extends about seventy rods upstream above the head of Island No. 3. That Island No. 3 lies partly between Island No. 4 and the north bank of the river, and is about one hundred and fifteen rods long with the stream, and extends about fifty rods below the foot of Island No. 4. That Island No. 2 lays south of lower end of Island No. 3, and Island No. 1 lays south of Island No. 2 and the foot of Island No. 4, and between that and the south shore.

152 *Divisi-n of Channels.*

That Islands No. 4 and 3 divide the stream into three channels above Islands Nos. 2 and 1, and that Islands Nos. 3, 2 and 1 divide the stream into four channels below Island No. 4.

That below Island No. 4, and over against the lower end of Island No. 3, the river is divided by Islands Nos. 1, 2, and 3 into four channels. That between the south shore and Island No. 1 runs a part of the water of the south channel; and between Islands Nos. 1 and 2 runs part of the water of the south channel and part of the water of the middle channel; and between Islands Nos. 2 and 3 runs part of the water of the middle channel.

Names of Channels.

That these plaintiffs will hereafter in this complaint designate the channel between the south shore and Island No. 4 as the south channel, and the channel between Island No. 4 and Island No. 3 as the middle channel, and the channel between Island No. 3 and the north shore as the north channel.

Volum- of Channels.

5th. That in a state of nature, and before the interruption or diversion of any of the streams into which said river is divided, where it passes said township No. 21, of range 18, the principal part of, and as these plaintiffs are informed and believe, about five-sixths of the flow of said river passed and ran through the channel north of Island No. 4, and about one-sixth thereof through the channel south of said Island No. 4. That at such time, as these plaintiffs are informed and believe, about one-third of the flow of such river ran and passed through the channel between Islands No. 4 and 3, and about one-half of the flow of such river ran and passed through the channel between Island No. 3 and the north shore of said river.

That no improvements for hydraulic purposes have been made on Islands Nos. 1 and 2, and no attempt has been made to use hydraulic power on either of them.

That these plaintiffs do not know what volume of water passed through the channel between south shore and Island No. 1, or that between Islands Nos. 1 and 2, or that between Islands Nos. 2 and 3, in their natural state, and before any improvements were made in the vicinity to affect such volume. That these plaintiffs do not know whether or not it is practical to make any use of hydraulic power on either Islands Nos. 1 or 2, but that they have made the owners of such islands parties defendant that they might be in court in this action to present any claim they, or either of them, may have as to the amount of water flowing in the south or middle channel of said river.

Impr't of Middle Ch.

6th. That in 1879 and 1880 Mathew J. Meade and N. M. Edwards were owners of Islands Nos. 3 and 4; that while they were such owners they built a dam and made a mill pond between said Island-3 and 4, which dam held and which mill pond received the water of the said middle channel, and which dam raised a head of about fifteen feet, which is called the Meade and Edwards water power.

Patten Paper Co.

7th. That this plaintiff, The Patten Paper Co. (Limited), is the owner of a large and valuable hydraulic power, parcel of said Meade and Edwards' water power, including a flow of about twenty-five thousand cubic feet of water per minute for use for hydraulic power to be drawn from the mill pond held by said Meade and Edwards' dam, and of the undivided half of two mill lots abutting on said Meade and Edwards' dam, to wit: the undivided half of that part of Island No. 3, described in Outagamie county registry of deeds, in volume 48 of Deeds, on page 105, to wit: Commencing at first angle down the stream from the lower waste weir on Kaukauna Island No. 3, Meade and Edwards' water power, thence running south 23 degrees, 40 minutes, east, 362 feet down and along stream to an iron monument, in rock bed, thence north 59 degrees, east, 414 feet down and along stream between island- Nos. 2 and 3, thence to a point (which point is north 59 degrees east, 314 feet from beginning) thence south 59 degrees west, 314 feet to beginning, 3 acres. Also the undivided half of that part of Island No. 4 described in said registry in volume 53 of Deeds, on page 401, to wit: Beginning at a point 10 feet in southwesterly direction from southwesterly corner of the dam across the channel at the foot of Meade and Edwards' water power, situated at Kaukauna Island No. 4, as it exists today, thence in southwesterly direction, parallel with the retaining wing wall, supporting the bank at the southwest end of the dam to the center of south channel of Fox river, thence westerly by center of said channel to a line which shall be parallel with the first line and 200 feet therefrom, measured on a line at right angles to first-mentioned line, thence north parallel to first-mentioned line to center of bank of said water power, thence by center of said bank to beginning.

8th. That said Patten Paper Co. (Limited), being the owner of said undivided half of said lots and said hydraulic power, leased the north part of the lands described in volume 48, on page 105 of said registry, with a flow of about twenty thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power to the Fox River Pulp and Paper Company on the 12th day of April, 1886, for the term of fifteen years from March 12th, 1883.

153 *Fox R. P. & P. Co.*

That said Fox River Pulp and Paper Company owns a pulp mill standing on said north part of said lot which cost about twenty-five thousand dollars and which it now runs and operates, and to the running and operation of which said flow of twenty thousand cubic feet of water per minute is necessary. That the use of said pulp mill and said water power is worth about eight thousand dollars per year. That said part of lot leased to Fox River Pulp and Paper Company is described in volume 42, Mortgages, page 456 said registry.

Union Pulp Co.

9th. That on or about August 1st, 1881, the Green Bay and Mississippi Canal Company was the owner of the undivided half of north side of Island No. 4 and south side of Island No. 3 and of the Meade and Edwards water power. That it then made to the Union Pulp Company a lease of the following-described lands, parcel of north side of Island No. 4, to wit: Commencing at the dam at foot Meade and Edwards' power 25 feet southwesterly from an iron pin set in bed rock at foot of stone dam at southwest corner of Kelso lot, thence running southeasterly at right angles with dam to channel between Islands 4 and 1, thence by such channel to east line of land deeded by Meade to Patten 19th April, 1882, in Deeds, volume 53, page 401, thence by said east line of Patten land to stone dam, thence by stone dam to point begins at and also of a constant flow of about twenty thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power for hydraulic power for term of ten years, renewable for one hundred years, which leasehold interest, said Union Pulp Company still holds.

That said Union Pulp Company has erected on said lot and owns a pulp mill worth about forty thousand dollars and now operates same, running same by said water power.

That the said pulp mill cannot be run or operated without the use of said water.

That the use of said mill and said water to run same is worth about fifteen thousand dollars per year.

Kelso Mill.

10th. That George F. Kelso is the owner of a valuable pulp mill situated on said dam between Islands Nos. 3 and 4 and run by water drawn from same. That such mill stands on south part of limits described in volume 48 of Deed-, on page 105 in said registry, and more particularly described as follows: Commencing at hole drilled into bed rock at foot of stone dam or wall on easterly side of same and near to the center of old channel of Fox river between Kaukauna Islands 4 and 3, thence along wall parallel thereto and northerly sixty (60) feet, thence easterly at right angles 150 feet, thence southerly at right angles 60 feet, thence westerly 160 feet to place of beginning, which description appears in volume 42 of Mortgages, on page 244, said registry.

That said Kelso has a lease of such lands and of a constant flow of about one thousand cubic feet of water per minute, parcel of, and to be drawn from, said Meade and Edwards' water power, from the Green Bay and Mississippi Company and the Patten Paper Co. (Limited), as lessors, made while they owned the same, which lease runs fifteen years from August 1st, 1881, and is renewable for one hundred years.

Upp-r Dam.

11th. That a dam has been built across said Fox river about one hundred rods above the head of Island No. 4, and that the defendant, The Kaukauna Water Power Company, has built a wide and deep canal from the mill pond above said dam, along in line with, and south of the south bank of said river to a point below the lower end of Island No. 4. That such canal is large enough to pass, and is intended to pass, the half of the flow of said river. That there are no openings from said canal into the river to return water to the river above the head of Island No. 4, or so that the same can flow into the middle channel of said river and come into said Meade and Edwards' water power. That it is the intention of said Kaukauna Water Power Company to draw from said river above said dam the half of the flow of said river and pass the same through their said canal and through the mills and factories of itself and its lessees into said river, at a point below the head of said Island No. 4, and so that the same shall not and cannot pass into said middle channel, and come into said Meade and Edwards' water power.

Kaukauna Canal.

12th. That said Kaukauna Water Power Company proposes, threatens and intends to carry and pass through its canal from said mill pond, maintained by the dam above said Island No. 4, down below the head of said Island No. 4, through the mills and factories of itself and its lessees, and so that it cannot pass into the said middle channel or into the said Meade and Edwards' mill pond, the one-half at least of the entire flow of said Fox river, which one-half includes the one-sixth appurtenant to the said south channel, and the one-third thereof appurtenant to the said middle channel, and which should of right flow and come into the mill pond furnishing water to the mills of these plaintiffs. That it, the Kaukauna Water Power Company, has so passed through its canal and the
154 mills and factories of itself and its lessees about one-half of the flow of said stream during the summer of 1886, to the great damage of these plaintiffs, and by so doing has almost entirely prevented the running of the mills of these plaintiffs, The Union Pulp Company and The Fox River Pulp and Paper Company, and that it, the Kaukauna Water Power Company, threatens to, and unless restrained by this court, will so draw and pass said half of said stream, and so deprive these plaintiffs of the use thereof, and of the use of their mills. That such interference by said Kaukauna Water Power Company and its lessees and tenants with the hydraulic rights and water power of these plaintiffs, causes great and constantly occurring damage to these plaintiffs. That such damages are not in their nature susceptible of definite calculation and are constantly varying in amount, because the amount of water drawn wrongfully from said river by said Kaukauna Water Power Company and its lessees and tenants varies at different times, and to keep accurate data relative to same would require the constant

attendance of a hydraulic engineer, and because of the uncertainty about the water which may from time to time come to plaintiffs' said mills, makes it uncertain what business may from time to time be done in such mills and what working force may from time to time be needed therein, or, what product may from time to time be manufactured therein.

G. B. & M. Canal.

13. That the Green Bay and Mississippi Canal Company has a canal leading from the said mill pond, maintained by said dam across Fox river above said Island No. 4, along in line with and north of the north bank of said Fox river, to a point below the head of said Island No. 3.

That such canal is large enough to pass, and is intended to pass, at least one-half of the flow of said river, and to pass the same down said canal and into said river at a point below the head of Island No. 3, and so that the same cannot run and pass into the said middle channel, and so that the same cannot come into the mill pond formed between said Islands Nos. 4 and 3, by the dam from the one to the other, and, during the past summer, has so passed about half the flow of said stream, so that the same has not and could not come into said mill pond between Islands Nos. 3 and 4, called the Meade and Edwards water power.

14. That the Green Bay and Mississippi Canal Company, and its lessees and tenants are, and have for several years been, and propose to, and will, continue, drawing and passing through their canal on the north side of said river from the mill pond maintained by the dam above Island No. 4, to a point below the head of Island No. 3, and so that it cannot pass into said middle channel and into the mill pond furnishing water to plaintiffs' mills about one-half of the flow of the Fox river and the half appurtenant to the said north channel.

Navigati-n.

15th. That the United States of America owns and controls said dam above Island No. 4, and the canal on the north side of the river so far as necessary for the maintenance of navigation, and the use of the water of the river for that purpose, and that, subject to such claim and interest, the Green Bay and Mississippi Canal Company owns the same, that is, so far as necessary for the maintenance and use of the same for hydraulic power, subject to the paramount right of and for navigation.

Defend'ts United in Interest with Pl'ff-.

16th. That Mathew J. Meade and the Green Bay and Mississippi Canal Company, Harriet S. Edwards and George F. Kelso are the owners of, or claim some interest in, the flow of water through the said middle channel, and are united in the interest herein with these plaintiffs, but that they refuse to unite with the plaintiffs in this action. That, as these plaintiffs are informed and believe, the said

Mathew J. Meade has little or no interest in the said matter, though he claims an interest. That he has conveyed away all his interest and that same has come to the plaintiff, The Patten Paper Company, though that contention is not presented in this action. That as plaintiffs are informed and believe, Harriet S. Edwards is the owner of the undivided quarter part of the flow of said middle channel, subject to the lease to the Union Pulp Company and the lease to Geo. F. Kelso. That the defendant, The Green Bay and Mississippi Canal Company, is the owner of the undivided quarter part of the flow of said middle channel subject to said lease to the Union Pulp Company and to George F. Kelso.

Kaukauna Tenants.

17th. That the defendants, The Milwaukee, Lake Shore and Western Railway Company, James C. Delany, David McCartney, G. Lind, J. Carlson, Joseph Kline, Michael Kline, James H. Elmore, The Badger Paper Company and The Brokan Pulp Company are tenants under, or are interested in, leases of, the Kaukauna Water Power Company, purporting to give authority to draw and use water from said Kaukauna Water Power Company's canal and as such lessees or tenants they are made parties defendant.

Sands.

18th. That B. Aymar Sands is trustee named in a certain trust mortgage made by said Kaukauna Water Power Company, which mortgage purports to cover said canal of the Kaukauna Water Power Company and the hydraulic power appurtenant thereto, and to be made available by drawing water from said canal.

155 *Smith & E.*

19th. That Henry D. Smith and Herman Erb are trustees named in a trust mortgage on the lands of the Green Bay and Mississippi Canal Company.

Kelso Mortgag-s.

That Aug. L. Smith and Asel W. Patten are mortgagees named in a mortgage on Geo. F. Kelso's pulp mill and power.

That Margaret J. Kelso and George W. Kelso are mortgagees named in another and second mortgage on Geoege F. Kelso's pulp mill and power.

Fairchild.

That Charles S. Fairchild is mortgagee of Harriet S. Edwards of part of Island No. 4. See volume 50, Mortgages, page 629, said registry.

G. B. & M. Tenants.

20th. That Aug. L. Smith, the Kaukauna Paper Company, the American Pulp Company, Henry Hewitt, Jr., William P. Hewitt,

John Jansen, Peter Reuter and Alexander Reuter are tenants under, or are interested in, leases of the Green Bay and Mississippi Canal Company, purporting to give authority to draw and use water from said Green Bay and Mississippi Canal Company's canal, and as such lessees and tenants they are made parties defendant.

Owners of Islands.

21st. That Island No. 1 is owned in undivided shares as follows: One-half by the Kaukauna Water Power Company, one-quarter by the Green Bay and Mississippi Canal Company and one-quarter by Harriet S. Edwards.

22d. That Island No. 2 is owned jointly by M. A. Hunt and Anna Hunt as joint tenants, they being husband and wife.

23d. That Island No. 3 is owned as follows: The undivided one-quarter thereof by the Green Bay and Mississippi Canal Company, and the undivided one-quarter thereof by Harriet S. Edwards, subject to lease of mill lot to Union Pulp Company, and mill lot to Geo. F. Kelso as above specified. The undivided half thereof by Mathew J. Meade, excepting the parcels thereof owned by Patten Paper Co. (Limited,) above mentioned and described in said registry in volume 48 of Deeds, on page 105, and volume 53 of Deeds, on page 401, and also, excepting parcel thereof described in said registry in volume 47 of Deeds, page 428, hereinafter particularly described as owned by Henry Hewitt, Jr.

That Henry Hewitt, Jr., owns the undivided half of about three acres at upper end and on north side of said Island No. 3, described in said registry in volume 47 of Deeds, page 428, and is as follows: That portion of Island No. 3, lying east of a line, beginning at a cedar tree, agreed upon, near the head of the island, running thence southeasterly to the first cross-channel so as to divide the upper part of Island No. 3, that is above said cross-channel into two equal parts as to area of dry land.

24th. That the land on Island No. 4, bordering the south channel, is owned as follows: One-quarter undivided by the Green Bay and Mississippi Canal Company, one-quarter undivided by Harriet S. Edwards, one-half undivided by the Kaukauna Water Power Company, as far down as the slaughter-house channel, and one-half undivided below the slaughter-house channel by Mathew J. Meade.

25th. That that part of Island No. 4, bordering the middle channel is owned as follows: By Mathew J. Meade one-half except that Patten Paper Co. (Limited), owns of Meade half that part described in vol. 53, Deeds, page 401, of said registry, and the Green Bay and Mississippi Canal Company and Harriet S. Edwards each one-quarter subject to leases of mill lots to Union Pulp Company and to Geo. Kelso, above specified.

Owners of Main Land.

26th. That the land bordering the south side of the south channel from above the head of Island No. 4, to below the head of Island No. 1, is owned by the Kaukauna Water Power Company.

27th. That that part of fractional section 24 bordering on said north channel is owned by the Green Bay and Mississippi Canal Company.

28th. That that part of private claim No. 1, bordering on said north channel, is owned by the Green Bay and Mississippi Canal Company and Henry Hewitt, Jr., and William P. Hewitt, but in just what shares these plaintiffs do not know, such title to part of same being in litigation between said canal company on one side and said Hewitts on the other.

29th. That that part of private claim No. 35, bordering on said north channel, is owned by the Chicago and Northwestern Railway Company.

30th. That the parties above named are owners of all the lands bordering the north and south shores of said river from the head of the upper Island No. 4, to the foot of the lower Island No. 1, and also of the shores of all said islands.

156 31st. That the above-named tenants of the various owners are all the tenants of all of such owners.

32d. That all parties interested in the amount of water appurtenant to the south, middle and north channels of said Fox river where same passes Islands Nos. 3 and 4, are named herein as plaintiffs or defendants.

Prayer for Judgment.

Wherefore these plaintiffs pray judgment of this court.

First. Determining and adjudicating what share or proportion of the entire natural flow of said Fox river is appurtenant to and of right should be permitted to flow in the south, middle and north channels of said river respectively.

Second. Restraining the defendant, The Kaukauna Water Power Company, and all persons and corporations claiming under it as mortgagees, lessees, purchasers or otherwise, and especially all such as are named defendant herein, from drawing from said Fox river above the head of Island No. 4, and passing around and below the head of said Island No. 4, and so that same shall not come into the middle channel of said river and into the mill pond of these plaintiffs, called the Meade and Edwards water power, more water, flow of said river, than the one-sixth part thereof, or more than the amount which by nature was appurtenant to and flowed in said south channel of said river.

Third. That Kaukauna Water Power Company pay to these plaintiffs costs of this action.

MOSES HOOPER,
Plaintiffs' Attorney.

157 STATE OF WISCONSIN:

In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY *et al.*
vs.
KAUKAUNA WATER POWER CO. *et al.*

STATE OF WISCONSIN, } ss:
Winnebago County, }

A. H. Goss, being duly sworn, deposes and says that on the 30th day of November, A. D. 1886, at the city of Appleton, Outagamie county, Wisconsin, he served the within summons and complaint upon the defendant Harriet S. Edwards by delivering to and leaving with the said Harriet S. Edwards a true and correct copy of the same. Defendant further says that said person so served was known by him to be Harriet S. Edwards and the same person who is named as one of the defendants in the above-entitled action.

A. H. GOSS.

Subscribed and sworn to before me this 8th day of Dec., 1886.

CORA B. HIRTZEL,
Notary Public, Wis.

158 STATE OF WISCONSIN:

In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY *et al.*
vs.
KAUKAUNA WATER POWER CO. *et al.*

STATE OF WISCONSIN, } ss:
Winnebago County, }

A. H. Goss, being duly sworn, deposes and says that on the 1st day of Dec., 1886, at Kaukauna, Outagamie county, Wisconsin, he served the within summons and complaint upon the defendant Peter Reuter by delivering a true copy thereof to and leaving same with Mary Reuter, a member of his, Reuter's, family, of suitable age and discretion to receive such service, to wit, the wife of said Reuter; that after diligent search and inquiry said Fleming could not be found, he being temporarily absent from Kaukauna, and the said Mary Reuter being the person in charge of said Reuter's house; that this deponent fully explained to said Mary Reuter the nature and contents of said summons and complaint; that he knows the said Reuter so served to be the identical Reuter named as defendant herein.

A. H. GOSS.

Subscribed and sworn to before me this 8th day of December, A. D. 1886.

CORA B. HIRTZEL,
Notary Public, Wis.

159 Endorsement: State of Wisconsin. Circuit court, Outagamie county. Patten Paper Company (Limited) and Union Pulp Company and Fox River Pulp and Paper Co., plaintiffs, *vs.* Kaukauna Water Power Company *et al.*, defendants. Complaint. Moses Hooper, plaintiffs' attorney. Personal service of the within summons and complaint admitted this 1st day of Dec., A. D. 1886. Brokaw Pulp Co., N. H. Brokaw, sec't'y; Jos. Kline, Mich. Kline, by Jo. Kline; G. Lind, J. Carlson, John Jansen, M. J. Meade, Geo. F. Kelso; P. R. Barnes, as att'y for Geo. W. Kelso & Margaret J. Kelso; M. A. Hunt; M. A. Hunt, att'y for Anna Hunt; American Pulp Co., James Conway, manager ag't. Personal service of the within summons and complaint admitted this 2nd day of Dec., A. D. 1886. Jas. H. Elmore; Vroman & Sale, att'ys for McCartney. Personal service of the within summons & complaint admitted this 30th day of November, A. D. 1886. W. P. Hewitt, Henry Hewitt, Jr., Aug. L. Smith, Green Bay & Miss. Canal Co., by A. L. Smith, sec. & treas'r; Herman Erb; Kaukauna Paper Co., by H. J. Rogers, sec'y & treas'r; Henry D. Smith. Personal service of the within summons & complaint admitted this 8th day of Dec., 1886. J. H. Martin, ag't C. & N. W. R'y. Cir. court, Outagamie Co. Filed Feb. 25, 1892. H. J. Mulholland, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

160 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
HENRY HEWITT, JR., and WILLIAM P. HEWITT, Impleaded with the Kaukauna Water Power Company, Matthew J. Meade, *et al.*, Defendants.

The said defendants, Henry Hewitt, Jr., and William P. Hewitt, jointly demur to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against them.

2nd. Because it appears upon the face of said complaint that the court has no jurisdcition of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Number- Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

DAVID S. ORDWAY,
Attorney for said Defendants, Henry Hewitt, Jr., & Wm. P. Hewitt.

161 Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, & Fox River Pulp and Paper Company, plaintiffs, against Kaukauna Water Power Company, Henry Hewitt, Jr., William P. Hewitt, *et al.*, defendants. Demurrer to complaint on part of Henry Hewitt, Jr., and Wm. P. Hewitt. David S. Ordway, att'y for def'ts Hewitt. Served by copy Dec. 30th, 1886. Moses Hooper, for plaintiff-. Copy of within received Dec. 30th, 1886. Circuit court, Outagamie county. Filed Dec. 31, 1886. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

162 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, *et al.*, Defendants.

The joint demurrer of the said defendants, Henry Hewitt, Jr., and William P. Hewitt, to the complaint of the said plaintiffs in the above action having been argued by counsel for the respective parties before this court at the February term there-, A. D. 1887, and the court having taken time for consideration and being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendants are given leave to answer the complaint within twenty days from this date on payment to the plaintiff- of ten dollars costs of the demurrer.

Dated March 10th, 1887.

By the court:

GEO. H. MYERS, *Judge.*

163 Endorsement: Circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the joint demurrer of Henry Hewitt, Jr., and Wm. P. Hewitt to the complaint. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

164 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
HENRY HEWITT, JR., Impleaded, &c., Defendants.

The said defendant, Henry Hewitt, Jr., demurs to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against him.

2nd. Because it appears upon the face of said complaint that the court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river, where the same passes said Islands Number Three and Four, is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

DAVID S. ORDWAY,
Attorney for Defendant Henry Hewitt, Jr.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs, against Kaukauna Water
165 Power Company, Henry Hewitt, Jr., *et al.*, defendants. Separate demurrer of Henry Hewitt, Jr., to complaint. David S. Ordway, att'y for def't Henry Hewitt, Jr. S'v'd Dec. 30th, 1886. Moses Heeper, for plaintiff. Copy of within received December 30th, 1886. Circuit court, Outagamie county. Filed Dec. 31, 1886. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

166 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Henry Hewitt, Jr., *et al.*, Defendants.

The separate demurrer of the said defendant, Henry Hewitt, Jr., to the complaint of the said plaintiffs in the above action having been argued by counsel for the said plaintiffs and said defendants, Hewitt, at the February term, 1887, before this court, and time having been taken for consideration thereof, now, on this tenth day of March, 1887, the court being in session and sufficiently advised concerning the same, it is ordered that said demurrer be, and the same is, overruled, and said defendant is given leave to answer the complaint within twenty days from this date on payment to the plaintiffs of ten dollars, costs of the demurrer.

Dated March 10, 1887.

By the court:

GEO. H. MYERS, *Judge.*

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power

Company *et al.*, defendants. Order overruling the demurrer of Henry Hewitt, Jr., to the complaint. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

167 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, B. AYMAR SANDS, *et al.*, Defendants.

The said defendant, B. Aymar Sands, demurs to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against him.

2nd. Because it appears upon the face of said complaint that the court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Number- Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

ALFRED L. CARY,
Attorney for Defendant B. Aymar Sands.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp & Paper Company, plaintiffs, against Kaukauna Water Power Company, Matthew J. Meade, B. Aymar Sands, *et al.*, def'ts. De-
168 murrer of B. Aymar Sands to complaint. Alfred L. Cary, att'y for said defendant. Copy of above received Dec. 31, 1886. Moses Hooper, plaintiffs' att'y. Circuit court, Outagamie county. Filed Jan. 3, 1887. F. C. Friedrichs, clerk. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

169 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, B. AYMAR SANDS, *et al.*, Defendants.

The demurrer of the defendant B. Aymar Sands to the complaint of said plaintiffs in the above action having been argued by counsel for the respective parties before this court at the February term thereof, A. D. 1887, and the court having taken time for considera-

tion thereof and being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendant is given leave to answer the complaint within twenty days from this date on payment to the plaintiffs of ten dollars, costs of the demurrer.

Dated March 10th, 1887.

By the court:

F. C. FRIEDRICHS, *Clerk.*

Endorsement: Circuit court, Outagamie county. Patten Paper Company, Limited, *et al*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of the def't B. Aymar Sands to plaintiffs' complaint. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

170 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, *et al.*, Defendants.

The said defendant, Matthew J. Meade, by Alfred L. Cary, his attorney, demurs to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against him.

2nd. Because it appears upon the face of said complaint that the court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Number- Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

ALFRED L. CARY,
Attorney for said Defendant, Meade.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, & Fox River Pulp and Paper Company, pl'ffs, against Kaukauna Water Power Company, Matthew J. Meade, *et al.*, defendants. Demurrer of Matthew
171 J. Meade. Alfred L. Cary, att'y for def't Meade. Copy of above demurrer received Dec. 31, 1886. Moses Hooper, plaintiffs' att'y. Circuit court, Outagamie county. Filed Jan. 3, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

172 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, *et al.*, Defendants.

The separate demurrer of Matthew J. Meade, one of said defendants, to the complaint of said plaintiff- in the above action having been argued at the February term, A. D. 1887, before this court, and time having been taken for consideration, the court being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendant is given leave to answer the complaint within twenty days from this date on payment of ten dollars, costs of demurrer to the plaintiff-.

Dated March 10th, 1887.

By the court:

GEO. H. MYERS, *Judge.*

Endorsement: Circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of Matthew J. Meade to the complaint. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

173 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARDS, *et al.*, Defendants.

The said defendant, Harriet S. Edwards, by Alfred L. Cary, her attorney, demurs to the complaint of the plaintiffs in the above action upon the following grounds:

1st. Because the said complaint does not state facts sufficient to constitute a cause of action against her.

2nd. Because it appears upon the face of said complaint that the court has no jurisdiction of the subject of that cause of action in said complaint contained which demands a determination or adjudication as to what share or proportion of the flow of Fox river where the same passes said Islands Number-Three and Four is appurtenant to and of right should be permitted to flow in the said south, middle, and north channels of said river.

3rd. Because it appears upon the face of said complaint that several causes of action have been improperly united.

ALFRED L. CARY,
Attorney for said Defendant, Edwards.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, & Fox River Pulp and Paper Company, pl'ffs, against Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, *et al.*, defendants. Demurrer of Harriet S. Edwards. Alfred L. Cary, att'y for
174 def't Edwards. Copy of above demurrer received Dec. 31, 1886. Moses Hooper, plaintiffs' att'y. Circuit court, Outagamie county. Filed Jan. 3, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

175 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARDS, *et al.*, Defendants.

The separate demurrer of the said defendant, Harriet S. Edwards, to the complaint of said plaintiffs in the above action having been argued by counsel for the respective parties before this court at the February term thereof, A. D. 1887, and the court having taken time for consideration and being now sufficiently advised concerning the same—

It is ordered thas said demurrer be, and the same is, overruled, and said defendant is given leave to answer the complaint within twenty days from this date on payment of ten dollars, costs of demurrer to plaintiff-.

Dated March 10th, 1887.

By the court:

GEO. H. MYERS,
Circuit Judge.

Endorsement: Circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of Harriet S. Edwards to the complaint. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun-26, 1894. Clarence Kellogg, clerk of supreme court Wis.

176 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Keslo, Augustus L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

The above-named defendants, Kaukauna Water-power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph
177 Kline, and Michael A. Hunt, by their attorney, Alfred L. Carey, answer the complaint of the said plaintiffs and deny that the principal part of the flow of said Fox river in a state of nature passed or ran through the channel north of said Island Number Four (4), and they state that about one-half of the flow of said river in a state of nature and before any interruption or diversion thereof ran and passed through the channel south of said Island No. Four, and that about one-half of the flow of said river in a state of nature and before any interruption or diversion thereof passed and ran through the said channel north of said Island Number Four down to the mouth of the said middle channel or the channel between said Islands Number 3 and 4, where said last-mentioned half divided, about one-third thereof or one-sixth of the whole flow of the river passing into and through the said middle channel and the remainder of said flow passing on down the said north channel around the north side of said Island Number Three and Two to slack water and the united channels below said islands; that these defendants have no knowledge or information sufficient to form a belief as to whether the flow of said Fox river where it passes through said township at its ordinary stage is about 300,000 cubic feet per minute; none of these defendants have ever measured the same or caused the same to be measured; but it is true that its flow is of large volume, and it is also true that a very small part of such flow in a state of nature passed into or through said middle channel. The bottom of said middle channel at and below or downstream from its mouth is all rock, and when said Meade & Edwards improved their said water power in said middle channel, which was after September, A. D. 1880, they, without any lawful right, excavated from the bottom of said middle channel at and below its

mouth large quantities of said rock, to the depth of two or three feet or more, entirely across the mouth of said middle channel, thus letting into said middle channel a much larger amount of
178 water than ever ran or passes through it before and a much larger amount or quantity of water than of right should pass through the same, and the said middle channel remains and now is in the same changed condition.

And these defendants, in further answering, state with reference to all the allegations contained in paragraphs seven (7) and eight (8) of said complaint as follows: That said Matthew J. Meade on the 8th day of September, 1880, being then the owner of the land next hereinafter alleged by him to have been conveyed, granted, and by warranty deed bearing date on said eight day of September, 1880, conveyed unto Henry Hewitt, Jr., and William P. Hewitt the undivided one-half of the following-described premises, to wit: "Commencing at the first angle down the stream from the lower waste weir on Kaukauna Island No. Three (3), Meade & Edwards' water power, thence running south 23° 40′ east three hundred & sixty-two (362) feet down and along said stream to an iron monument in rock bed; thence north 59° east 414 feet down and along the stream between Islands Number- Two and Three (2 & 3); thence to a point three hundred and sixty-two (362) feet (which point is north 59° E. three hundred and fourteen (314) — from place of beginning); thence south 59° west 314 feet to place of beginning, containing three (3) acres of land, with the right to use three hundred and twenty-five (325) horse-power thereon; also the right to maintain and use the channel below twenty-five (25) feet in width next to the center for a tail race and the privilege of excavating, if necessary."

That the said deed was recorded on the 13th day of September, A. D. 1880, in vol. 48 of Deeds, on page 105, in the office of the register of deeds of said county of Outagamie.

That the said William P. Hewitt, in said last-mentioned deed named as one of the grantees, on or about the 21st day of
179 March, 1881, by quitclaim deed of said last-mentioned date, granted and quitclaimed unto the said Henry Hewitt, Jr., all of his, said William P. Hewitt's, right, title, and interest to and in the land, property, premises, rights, and privileges in said deed of September 8th, 1880, from said Matthew J. Meade described, which said last-mentioned quitclaim deed from said William P. to Henry Hewitt, Jr., is recorded in the office of register of deeds for said county of Outagamie, in vol. 50 of Deeds, on page 156.

That said Henry Hewitt, Jr., on or about the 17th day of April, 1882, by warranty deed of said last-mentioned date granted and conveyed unto the said Patten Paper Company, Limited, the same premises, land, property, rights, & privileges (and none other) which were mentioned in and conveyed to him, said Henry Hewitt, Jr., by the two conveyances above mentioned, to wit, the one to him and William P. from Meade and the other from William P. Hewitt.

The said last-mentioned deed to said Patten Paper Company was recorded on the 19th day of April, 1882, in vol. 53 of Deeds, page

402, in said office of the register of deeds for said county of Outagamie.

That said Matthew J. Meade on or about the 19th day of April, 1882, made, executed, and delivered to said Patten Paper Company, Limited, his warranty deed of that date of the following-described property, viz., the undivided half of the following land: "Beginning at a point ten feet in southwesterly direction from southwesterly corner of the dam across the channel at the foot of Meade & Edwards' water power, situated at Kaukauna Island No. 4, as it exists today, thence in a southwesterly direction parallel with the retaining wing wall supporting the bank at the southwest end of the dam to the center of the south channel of Fox river; thence westerly by the center of said channel to a line which shall be parallel with the first line and 200 feet therefrom measured on
180 a line at right angles to first-mentioned line; thence parallel north to the first-mentioned line to the center of bank of said water power; thence by center of said bank to the place of beginning, reserving 20 feet from water for roadway; also right to cut said bank at any point said second party shall see fit upon above premises for a flume of sufficient capacity to draw water to amount of 400 horse-power from said Meade & Edwards' water power, said flume to be kept planked over by second party, together with whole of water power or hydraulic power to amount of 400 horse-power to be drawn from said Meade & Edwards' water-power canal at any point on above-described land or the right and privilege to use and draw said 400 horse-power for hydraulic purposes from said Meade & Edwards' canal over and through lands on said canal sold to Hewitt Brothers by first party, as said second party may select. Second party agrees to pay its proportionate part to maintain and keep in repair the dam and banks of canal in proportion as 400 horse-power may appear to the whole amount of water power created by said canal."

And these defendants, further answering, state that said Patten Paper Company, Limited, on or about the 12th day of March, 1883, by its written lease acknowledged on that day and afterwards on the 12th day of April, 1886, recorded in the office of the register of deeds of said county of Outagamie, in vol. 42 of Mortgages, on page 456, purported to lease unto the said plaintiff, The Fox River Pulp and Paper Company, certain premises in said lease described as follows, viz:

"A part or portion of the land on the Meade & Edwards water-power canal sufficient on which to erect a pulp and paper mill and carry on the business of manufacturing wood pulp and paper, and only a sufficient portion of the land for this purpose is hereby leased from the piece, parcel, or tract described in a deed to Patten Paper Company of Neenah, Wis., by Henry Hewitt, Jr., and wife,
181 dated the 17th day of April, 1882, and recorded in the register's office of Outagamie county April 19th, 1882, at 3 o'clock p. m., vol. 53, page 402, for the term of fifteen years from 12th of March, 1883, and also during the same time the right of taking and drawing from Meade and Edwards' water-power canal water

equal to five hundred and seventy-five (575) horse-power (each horse-power being equal to $52\frac{8}{10}$ cubic feet of water per minute under head of ten feet), said water to — used for hydraulic purposes on said land and not elsewhere, and in any business not more hazardous than for the yearly rent of $3.00 per horse-power."

These defendants deny that said plaintiff, Patten Paper Company, Limited, ever leased the north part of the said land described in said deed recorded in vol. 48 of Deeds, on page 105 of said registry, to said plaintiff, The Fox River Pulp and Paper Company, or to any other lessee or party.

And these defendants, further answering, state that they have no knowledged or information sufficient to form a belief as to who at the time of the commencement of this action owned or who now owns the pulp mill mentioned in folio 18 of said complaint and there stated to be standing on the north part of said lot so by said Meade conveyed to the said Hewitts, or as to whether the same pulp mill cost about twenty-five thousand dol-ars, or whether said Fox River Pulp and Paper Company at the time of the commencement of this suit run and operated the same, or whether it now runs and operates the same, or whether said flow of twenty thousand cubic feet of water per minute is necessary to its running and operation, or as to whether the use of said pulp mill and said water power is worth about eight thousand dollars per year or any other sum.

And these defendants deny each and every statement, matter, fact, and thing in the said seventh and eighth paragraphs of said
182 complaint alleged or contained not herein qualified, admitted, or specifically denied.

And these defendants, further answering, state that the lease mentioned in the ninth paragraph of said complaint as having been made by said Green Bay and Mississippi Canal Company to the Union Pulp Company has not been recorded, and these defendants have no definite knowledge or information concerning the same, but upon information and belief deny that said lease by its terms conveys or leases about twenty thousand cubic feet of water per minute, and these defendants state upon information and belief that said lease mentions or specifies three hundred horse-power as the amount of water which said Union Pulp Company is entitled to or may draw from said Meade & Edwards' water power; and these defendants state that they have no knowledge or information sufficient to form a belief as to whether the pulp mill of said Union Pulp Company was erected upon or is upon the lot described in said lease and in said complaint, or as to whether said mill cannot be run or operated without the use of said water, or as to whether the use of said mill and said water to run the same is worth about fifteen thousand dollars a year or as to what sum per year it is worth.

And these defendants, further answering said complaint, state that they have no knowledge or information sufficient to form a belief as to whether George F. Kelso is the owner of the pulp mill mentioned in paragraph ten of said complaint, or as to whether said pulp mill stands upon the south part of limits described in volume

48 of Deeds, page 105, as in said paragraph ten of said complaint stated.

That the said Green Bay & Mississippi Canal Company and Patten Paper Company, Limited, jointly as lessors on or about the 14th day of October, 1884, by their written lease of that date leased
183 and demised unto said George F. Kelso a lot of land described as follows, viz: "Beginning at a hole drilled into the bed rock at the foot of a stone dam or wall on easterly side of same and near the center of the old channel of Fox river between Kaukauna Islands No. three (3) and four (4), thence along said wall parallel thereto and northerly sixty (60) feet, thence easterly at right angles with first line one hundred and fifty (150) feet, thence southeasterly at right angles with second line sixty (60) feet, thence westerly one hundred and fifty (150) feet to the place of beginning, for the term of fifteen years from August 1, 1881, and also during the same time the right of taking and drawing from the dam adjacent to said land water equal, at 16-foot head, to three hundred (300) horse-power (each horse-power being equal to 33 cubic feet of water per minute), which said lease is by its terms made renewable at the option of said lessee, upon certain conditions therein specified, for the term of 100 years."

And these defendants state that none of said grantees or lessees named in the foregoing leases or deeds have any other ownership or rights in the said lands above mentioned bordering upon said Fox river or in the said Islands Number 1, 2, 3, and 4 than as specified and set forth in the said conveyances and leases hereinabove mentioned and described.

And these defendants deny that the one-half of the whole flow of Fox river which said defendant, Kaukauna Water Power Company, is charged in the 11th and 12th paragraphs of said complaint with taking and intending to take into its said canal includes one-third or any other part of the flow of said river appurtenant or belonging to the said middle channel; and these defendants deny that they or either of them have ever drawn or taken through or into said canal of the Kaukauna Water Power Company any more water than belonged to and of right should have flowed in or down the said south channel of said Fox river, and they deny that they threaten
184 or intend to carry or pass through the canal of said Kaukauna Water Power Company more than one-half of the flow of said Fox river, and they allege that they have lawful right to take into and pass through said canal one-half of the flow of said river; and these defendants deny that they or either of them have ever drawn or passed through said Kaukauna Water Power Company's said canal the one-half of the whole flow of said Fox river.

And these defendants, further answering, say that the canal mentioned in paragraphs 13 and 15 of said complaint is owned by the United States of America, and that the Green Bay and Mississippi Canal Company does not own the same so far as is necessary for the maintenance or use of the same for hydraulic power or otherwise.

And these defendants state that it is true, as alleged in the 16th paragraph of said complaint, that Matthew J. Meade before the commencement of this action had but little, if any, interest in the flow of water through said middle channel, and that what little interest he might have then had has been by him conveyed to the Kaukauna Water Power Company since the commencement of this action, said Meade taking back and now holding a mortgage thereupon to secure part of the purchase price thereof; that it is true that said Harriet S. Edwards at the time of the commencement of this action was the owner of the undivided quarter part of the flow of said middle channel subject to the leases above set forth to the Union Pulp Company and to George F. Kelso, but that since the commencement of this action she, the said Harriet S. Edwards, has conveyed to this defendant, The Kaukauna Water Power Company, all of her right, title, and interest to and in the flow of said water of said middle channel, excepting from the Meade & Edwards water power, as the same was established at the date of said conveyance, to wit, the 13th day of December, 1886, property and rights in said deed described as follows, viz: Three — and seventy-five horse-
185 power of water, 75 of which horse-power was included in said lease to Kelso, and 300 of which horse-power was included in said lease to the Union Pulp Company.

And these defendants, further answering, state that it was true at the time of the commencement of this action that Islands No. One and No. Two were owned as stated in paragraphs 21 and 22 of said complaint, but that since the commencement of this action, to wit, in December, 1886, said Harriet S. Edwards, Michael Hunt, and Anna Hunt, by deeds duly executed, granted and conveyed unto the defendant The Kaukauna Water Power Company their whole interest, right, and title in and to said Islands One and Two, which said Edwards' and Hunt's titles and interests are now held and owned by the said Kaukauna Water Power Company, and that said defendant, Michael A. Hunt, took back upon such conveyance a purchase-money mortgage upon said Island No. Two and now owns the said mortgage.

And these defendants, further answering, state that the ownership of said Island No. Three at the time of the commencement of this action, as these defendants are informed and believe, is cor-ectly stated, or substantially so, in paragraph 23 of said complaint, and that since the commencement of this action said Harriet S. Edwards and Matthew J. Meade have sold and conveyed to this defendant, Kaukauna Water Power Company, which now owns the same, their entire portions, rights, titles, and interests of, in, and to said Island No. 3.

And these defendants, further answering, say that since the commencement of this action said Matthew J. Meade has, by warranty deed, conveyed to the defendant The Kaukauna Water Power Company the undivided half of all of the land on said Island No. Four bordering the south channel of the said Fox river below the slaughter-house channel, and that said Harriet S. Edwards, since the commencement of this action, to wit, on the 30th day of De-

cember, 1886, also conveyed to said defendant, Kaukauna
186 Water Power Company, one-quarter undivided of all the land on said Island No. Four bordering the south channel, reserving, however, the perpetual use of an undivided fourth part of a portion thereof, being a rectangular piece 500 feet long, northerly and southerly, and 250 feet wide, adjoining the Meade & Edwards water power, and which land so conveyed and said portion the use whereof is so reserved is fully described in said deed from said Edwards to said defendant, Kaukauna Water Power Company; which said deed is recorded in the office of the register of deeds for said county of Outagamie, in volume 67 of Deeds, pages 3 and 4.

And these defendants, further answering, state that the ownership at the time of the commencement of this action of that part of Island No. Four which borders the said middle channel is correctly stated in paragraph 25 of said complaint, and that since the commencement of this action said Matthew J. Meade and Harriet S. Edwards have granted and conveyed unto the defendant Kaukauna Water Power Company the entire right, title, and interest which they, the said Meade and Edwards, are alleged in said complaint to have had and which they, in fact, did have at the time of the commencement of this action in and to that part of said Island Number Four bordering the middle channel of said Fox river, the said Harriet S. Edwards saving and reserving the use of said rectangular piece or parcel thereof 250 feet wide, as specified in her said deed, to said Kaukauna Water Power Company above mentioned.

And these defendants deny that the part of said fractional section No. 24 bordering on said north channel of Fox river is owned by the said Green Bay and Mississippi Canal Company, and upon information and belief state that the same is owned by the United States of America.

And these defendants state that they have no knowledge or information sufficient to form a belief as to whether the
187 parties in said complaint named are owners of all of the lands bordering the north and south shores of said river from the head of the said Island No. Four to the foot of said Island Number One and of the shores of all of said islands or as to whether all parties interested in the amount of water appurtenant to the south, middle, and north channels of said Fox river where same passes Islands Nos. 3 and 4 are named in said complaint as either plaintiffs or defendants.

ALFRED L. CARY,
Attorney for said Defendants.

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp & Paper Company, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Answer. Alfred L. Cary, attorney for defendants, as stated within. Filed Jul- 10, 1888. Circuit court, Outagamie county. F. C. Friedrichs, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

188 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER —, HENRY HEWITT, JR., THE CHICAGO AND NORTHWESTERN RAILWAY COMPANY, and Others, Defendants.

And now comes the said defendant, The Chicago and Northwestern Railway Company, impleaded, &c., by Jenkins, Winkler, Fish & Smith, its attorneys, and demurs to the complaint of the plaintiffs herein, and for grounds of demurrer alleges that it appears upon the face of said complaint—

First. That said complaint does not state facts sufficient to constitute a cause of action.

Second. That several causes of action are improperly united therein.

JENKINS, WINKLER, FISH & SMITH,
Attorneys for said Defendant, The Chicago and Northwestern Railway Company, Milwaukee, Wis.

Endorsement: Circuit court, county of Outagamie. Patten Paper Company (Limited) *et al. vs.* Kaukauna Water Power —, Chicago & Northwestern Railway Co., & others. Demurrer to complaint. Jenkins, Winkler, Fish & Smith, attorneys for defendant C. & N. W. R'y Co. Copy. Circuit court, Outagamie county. Filed May 26, 1888. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

189 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, HENRY HEWITT, JR., The Chicago and Northwestern Railway Company, *et al.*, Defendants.

The separate demurrer of the said defendant, The Chicago and Northwestern Railway Company, to the complaint of the said plaintiffs in the above action having been argued by counsel for the respective parties at the February term, 1887, before this court, *and* upon due consideration and deliberation thereof it is ordered that said demurrer is overruled, and said defendant is given leave to answer the complaint within twenty days from this date on payment of ten dollars, costs of the demurrer to plaintiffs.

Dated March 10, 1887.

By the court:

F. C. FRIEDRICHS, *Clerk.*

Endorsement: Circuit court, Outagamie county. Patten Paper Company *et al. vs.* The Chicago & N. W. Railway Company *et* —.

Order overruling demurrer. Circuit court, Outagamie county. Filed May 26, 1888. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

190 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, THE Green Bay and Mississippi Canal Company, The Chicago and Northwestern Railway Company, and Others.

And the said defendant, The Chicago and Northwestern Railway Company, impleaded, etc., by Jenkins, Winkler, Smith & Vilas, its attorneys, appears in the said action and answers to the complaint of the said plaintiff as follows:

First. This defendant has no knowledge or information sufficient to form a belief as to the title or ownership of the different parcels of land in said complaint set forth and leaves the plaintiffs to make such proof thereof as they may be advised.

Second. This defendant admits that in a state of nature and before the interruption or diversion of any of the streams into which said river is divided, where it passes township number twenty-one (21) and range eighteen (18), the principal part of and about five-sixths of the flow of said river passed and ran through the channel north of Island Number Four and about one-sixth thereof south of Island Number Four; but this defendant has no knowledge or information sufficient to form a belief as to whether one-third or about one-third of the flow of such river ran and passed through the channel between Islands Four and Three, but admits that at least one-half of the flow of the said river ran and passed through
191 the channel between Island Number Three and the north shore of said river.

Wherefore this defendant prays that in any degree to be entered in the said action it may be adjudicated and determined that at least one-half of the flow of said Fox river is appurtenant and of right should be permitted to flow in the north channel of said river.

JENKINS, WINKLER, SMITH & VILAS,
Attorneys for Defendant The Chicago & Northwestern Railway Co.

MILWAUKEE COUNTY, *ss:*

James G. Jenkins, duly sworn, says that he is one of the attorneys and the counsel for the said defendant, The Chicago and Northwestern Railway Company, and has had the sole and exclusive charge of the defense in this action; that he makes this verification in its behalf; that he believes the foregoing answer to be true; that the grounds of his belief are writt-n statements made — this deponent as such counsel by the agents of said defendant charged with the duty of collecting information in respect to the facts of this case,

and also from information derived from communications had by deponent with persons connected with this litigation who had made personal examination into the matter, and which statements deponent believes to be true; that the reason why this verification is not made by some officer of the defendant is that no such officer resides in or is now within the county of Milwaukee, where this deponent and the attorneys for the defendant reside.

JAS. G. JENKINS.

Subscribed and sworn to before me this 12th day of July, 1888.

JAMES H. BARRY,
Notary Public, Milwaukee County, Wisconsin.

192 Endorsement: Circuit court, county of Outagamie. Patten Paper Company (Limited) *et al. vs.* Chicago & Northwestern Railway Co. & others. Answer of C. and N. W. R'y Co. Jenkins, Winkler, & Smith and Vilas, attorneys for defendant C. & N. W. R'y Co. Orig. Circuit court, Outagamie county. Filed Feb. 11, 1890. Geo. W. Gerry, clerk. A. M. Smith, deputy. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

193 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.

Please take notice that we have been retained by and hereby appear for the defendants Geo. W. Kelso, Geo. F. Kelso, and Margaret J. Kelso in this action and demand that a copy of all papers herein be served on us at our office, in Oshkosh, county of Winnebago, Wisconsin.

Dated the 13th day of December, A. D. 1886.

BARNES & STEWART,
Attorneys for Defendants Geo. W., Geo. F., and Margaret J. Kelso.

To Moses Hooper, attorney for plaintiffs.

Endorsement: In circuit court, Outagamie county. Patten Paper Company (Limited) *et al.* against Kaukauna Water Power Company *et al.* Notice of retainer. Barnes & Stewart, att'ys for def'ts Geo. F., Geo. W., & Margaret J. Kelso. Personal service of a notice, of which the within is a copy, is hereby acknowledged this 13th day of Dec., A. D. 1886. Moses Hooper, pl't'ffs' att'y. Cir. court, Outagamie Co. Filed in open court Feb. 1, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

194 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
GEO. F. KELSO, GEO. W. KELSO, MARGARET J. KELSO, & MARGARET KELSO, Impleaded, *et al.*

And now come the defendants Geo. F. Kelso, Geo. W. Kelso, Margaret J. Kelso, and Margaret Kelso, by their attorneys, Barnes & Stewart, and demur to the complaint herein and assign the following grounds of demurrer:

For that the said complaint upon the face thereof does not state facts sufficient to constitute a cause of action against them.

Wherefore they pray judgment that the said plaintiffs be barred from having or maintaining their actions aforesaid against them.

BARNES & STEWART,
Attorneys for Def'ts Geo. F. Kelso, Geo. W. Kelso, Margaret J. Kelso, and Margaret Kelso.

Endorsement: Circuit court, Outagamie county. Patten Paper Company, &c., *vs.* Geo. F. Kelso *et al.* Demurrer. Due service of the within demurrer admitted this 15th day of January, 1887. Moses Hooper, att'y for pl'ff-. Circuit Court, Outagamie county. Filed Feb. 4, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

195 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
GEO. F. KELSO, GEO. W. KELSO, MARGARET J. KELSO, & MARGARET KELSO, *et al.*

The joint demurrer of the said defendants, Geo. F. Kelso, Geo. W. Kelso, Margaret J. Kelso, and Margaret Kelso, to the complaint of said plaintiffs in the above action having been argued by counsel for the respective parties before this court at the February term thereof, A. D. 1887, and the court having taken time for consideration and being now sufficiently advised concerning the same—

It is ordered that said demurrer be, and the same is, overruled, and said defendants are given leave to answer the complaint within twenty days from this date on payment to the plaintiffs of ten dollars, costs of the demurrer.

Dated March 10th, 1887.

By the court:

F. C. FRIEDRICHS, *Clerk.*

Endorsement: 9–352. In circuit court, Outagamie county. Patten Paper Company (Limited) *et al.*, plaintiffs, against Kaukauna Water Power Company *et al.*, defendants. Order overruling the demurrer of the defendants Geo. F. Kelso, G. W. Kelso, Margaret J.

Kelso, and Margaret Kelso. Circuit court, Outagamie county. Filed Mar. 10, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

196 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
KAUKAUNA WATER POWER COMPANY *et al.*

It is hereby stipulated and agreed that Margaret Kelso be admitted as party defendant in this action, and that her time to answer, and that the time to answer on the part of George W. Kes*l*o, George F. Kelso, and Margaret J. Kelso, defendants herein, be extended to 1st February, and time to demur be extended to 15 January, 1887.

Dated January 6th, 1887.

MOSES HOOPER,
Pl'ffs' Attorney.

To Barnes & Stewart.

Endorsement: Circuit court, Outagamie county. Patten Paper Company (Limited) *et al. vs.* Kaukauna Water Power Company *et al.* Stipulation admitting party defendant and extending time to answ. Barnes & Stewart, att'y- for Geo. F., Geo. W., Margaret J., and Margaret Kelso. Cir. court, Outagamie Co. Filed in open court Feb. 1, 1887. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk supreme court Wis.

197 Circuit Court, Outagamie Co.

PATTEN PAPER COMPANY, LIMITED, *et al.*
vs.
KAUKAUNA WATER POWER COMPANY *et al.*

It is hereby stipulated and agreed that this cause be, and the same hereby is, discontinued as to the defendants George W. Kelso, Margaret J. Kelso, and Margaret Kelso without cost to either party.

Upon acknowledged payment to plaintiff, as per order of this court, made March 10th, 1887, it is further stipulated and agreed that the corporation The Reese Pulp Co. be admitted as party defendant in this cause in the place and stead of Geo. F. Kelso herein, and that said defendant so admitted have twenty days in which to answer, and that notice of trial for April term, 1889, be waived, and that this cause be placed on the calendar for that term, this stipulation to take place of and — substituted for stipulation dated September 14, 1888.

Dated this 6th day of April, 1889.

MOSES HOOPER,
Plaintiffs' Att'y.
P. R. BARNES,
Att'y for Def'ts George W. Kelso, Margaret J. Kelso, Margaret Kelso, Geo. F. Kelso, & The Reese Pulp Co.

Endorsement: Circuit court, Outagamie county. Patten Paper Company *et al.*, pl'ff-, *vs.* Kaukauna Water Power — *et al.*, def'ts. Original. Stipulation for discontinuance & substitution of party defendant. P. R. Barnes, def't-' att'y, for Reese Pulp Co., Kelsos. Filed Apr. 8, 1889. Circuit court, Outagamie county. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

198 STATE OF WISCONSIN:

In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et als.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et als.*, Defendants.

Whereas the interest of George F. Kelso and George W. Kelso and Margaret J. Kelso in the subject-matter of this action and in the land and water power effected thereby has since the commencement of this action passed to and become vested in the Reese Pulp Company; and

Whereas the said Reese Pulp Company has appeared in said action and answered the complaint of the plaintiffs: Now, therefore, on motion of the attorneys of both plaintiffs and defendants it is—

Stipulated that the Reese Pulp Company be substituted as defendant herein in place and stead of George F. Kelso, George W. Kelso, and Margaret J. Kelso, and that said George F. Kelso, George W. Kelso, and Margaret J. Kelso be dismissed and discharged as defendants herein.

MOSES HOOPER,
Attorneys for Plaintiffs.
ALFRED L. CARY,
Attorney for Kaukauna Water Power Co. and all Other Defendants for Whom He has Already Appeared Herein.
WINKLER, FLANDERS, SMITH, BOTTUM & VILAS,
Att'ys for C. & N. W. R'y Co.
B. J. STEVENS,
Att'y for G. B. & Miss. Canal Co.
E. MARINER,
Of Counsel for G. B. & Miss. Canal Co.

199 STATE OF WISCONSIN:

In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) *et als.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et als.*, Defendants.

Whereas the interest of George F. Kelso and George W. Kelso and Margaret J. Kelso in the subject-matter of this action and in

the land and water power effected thereby has since the commencement of this action passed to and become vested in the Reese Pulp Company; and

Whereas the said Reese Pulp Company has appeared in said action and answered the complaint of the plaintiff-: Now, therefore, on motion of the attorneys of both plaintiffs and defendants, it is—

Ordered that the Reese Pulp Company be substituted herein as defendant in place and stead of George F. Kelso, George W. Kelso, and Margaret Kelso, who are hereby dismissed from this cause as defendants.

By order of the court:

GEO. H. MYERS, *Judge.*

November 25th, 1890.

Endorsement: In circuit court, Outagamie county. Patten Paper Co. (Limited) *et als.*, plaintiffs, *vs.* Kaukauna Water Power Company *et als.*, defendants. Copy. Stipulation and order for discharge of Kelsos as def'ts. Personal service of a copy of within acknowledged this — day of ——, 189–. Hooper & Hooper, for —. Cir. court, Outagamie Co. Filed in open court Nov. 28, 1890. A. L. Smith, clerk, by A. M. Smith, deputy. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

200 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY *et al.*, Pl'ffs,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, D'fe's.

Now comes the defendant Reese Pulp Company, one of the defendants in the above-entitled action, by P. R. Barnes, its attorney, and for separate answer to the plaintiffs' complaint herein avers—

That the defendant is a corporation duly organized and existing under and by virtue of the laws of the State of Wisconsin and doing business at Kaukauna, Wis., under its corporate name of Reese Pulp Company.

That after the commencement of this action this defendant purchased of the defendant George F. Kelso, one of the original defendants in said action, *of* the said pulp mill, situated upon the property mentioned and described in paragraph number ten of the plaintiffs' complaint herein and took an assignment of one certain lease made by the Green Bay & Mississippi Canal Company and Patten Paper Company (Limited) to said defendant, Geo. F. Kelso, of the premises and entire water power mentioned and set forth in said paragraph number ten aforesaid of the plaintiffs' complaint and upon which said pulp mill heretofore owned and operated by said Geo. F. Kelso is situated and thereby succeeded to all the rights and interests of said Geo. F. Kelso in and to said premises, water power, and appurtenances thereto belonging and now are the owners and in possession of the same.

That since the purchase of said mill and assignment of said lease

of land from said defendant, Geo. F. Kelso, as hereinabove set forth this defendant has made improvements in said pulp mill and other improvements on said leased premises of great value, to wit, in the sum of $14,000, and is now engaged in operating said pulp
201 mill and depend- upon the Mead & Edwards water power named and set forth in paragraph number six of the plaintiffs' complaint in this action for its water to propell and operate its said pulp mill, and the defendant *of* avers—

That any diversion of water from said Mead & Edwards' water power will greatly injure them in their business and in the operation of said pulp mill will cause them great and irreparable injury.

That after this defendant became successor of said defendant, Geo. F. Kelso, as hereinbefore set forth it became a party defendant in this cause and thereupon duly tendered to the plaintiff- herein its defense of this defendant if any was needed; that the plaintiff- declined said defense, and this defendant now, for the purpose of protecting its interests in the said action, makes this answer.

That the defense, further answering, admits upon information and belief all the material allegation- of the plaintiffs' complaint in this cause.

Wherefore this defendant prays the judgment of the court that its interests in and to the continual flow of water into said Mead & Edwards' dam and water power and its interest in operating said pulp mill, situated and located upon said water power, be protected by this court by injunction or other order or judgment of the court as shall be just and equitable in the premises.

P. R. BARNES,
Attorney for Def't Reese Pulp Company.

Endorsement: Circuit court, Outagamie county. Patten Paper Co. (Limited) *et al. vs.* Kaukauna Water Power Co. *et al.* Original. Answer of Reese Pulp Company. Due & personal service of within answer admitted this 24th day of April, 1889. Moses Hooper, att'y for pl'ff-. P. R. Barnes, att'y for Reese Pulp Company. Circuit court, Outagamie county. Filed May 25, 1889. F. C. Friedrichs, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

202 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, The Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

STATE OF WISCONSIN, *County of Dane,* } ss:

B. J. Stevens, being duly sworn, deposes and says that he is the attorney of The Green Bay and Mississippi Canal Company in the above-entitled action, with whom, as such attorney, E. Mariner, Esq., of Milwaukee, is associated as counsel, and has been such attorneys and so associated since the commencement thereof.

That, as he is informed and believes, service of process in said action was duly made upon all of the defendants above in
203 the title of the action aforesaid named.

That the following-named defendants appeared in said action by Alfred L. Cary, attorney, of Milwaukee, with whom was associated as counsel David S. Ordway, Esq., of Milwaukee, Wis., viz., Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Michael A. Hunt, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Henry Hewitt, Jr., and William P. Hewitt; that the defendant Reese Pulp Company appeared in said action by P. R. Barnes, an attorney of Chicago, Illinois; that the defendant The Northwestern Railway Company appeared in said action by Messrs. Jenkins, Winkler, Smith & Vilas, now Winkler, Flanders, Smith, Bottom & Vilas, attorneys, of Milwaukee, Wisconsin; that the defendant David McCartney appeared in said action by Messrs. Vroman & Sale, attorneys, of Green Bay, Wisconsin, who thereupon stipulated with the attorneys for the plaintiff a waiver of service of all notices in the action "until he (the defendant McCartney) shall give notice to the contrary, provided, however, that no personal judgment against him shall be entered herein;" that the Green Bay and Mississippi Canal Company has appeared in said action by B. J. Stevens, attorney, with E. Mariner, Esq., of counsel; that no other of the

defendants therein have appeared in said action, and all defendants other than those above named are in default.

Deponent further says that pursuant to leave obtained by order of the court made in this action on the 28th day of November, 1890, and duly entered in the office of the clerk of said court, an amended answer of said canal company was duly filed in said action, and shortly thereafter and several months prior hereto copies of the same were served upon Messrs. Hooper & Hooper, attorneys for the plaintiffs in said action, and upon the said Alfred L. Cary, attorney, and D. S. Ordway, of counsel for the defendants represented
204 by them, as aforesaid (excepting as hereinafter stated); upon Messrs. Winkler, Smith, Flanders, Bottom & Vilas, as attorneys for the Chicago and Northwestern Railway Company, and upon the said P. R. Barnes, as attorney for said defendant, Reese Pulp Company, such parties representing the plaintiffs and all of the defendants who have appeared in said action excepting the said McCartney, who waived notice as aforesaid; that in and by said amended answer the said canal company, defendant, set up as against the plaintiffs and against all other of the defendants in said action not claiming under the said canal company certain counter-claims, based upon an asserted prior right of use by said canal company of the waters and water powers mentioned in the plaintiffs' complaint, which prior right of use, so far as the same shall from time to time be asserted, is exclusive of any right of use on the part of the plaintiffs or any of the defendants not claiming under the canal company; that such counter-claims were properly of necessity and by law required to be set up as against the plaintiffs by answer and not cross-complaint, and, as deponent is advised and believes, were so by answer properly set up against each and all of the defendants affected thereby, if by the prayer of said answer or otherwise they be properly notified that such counter-claims are intentionally set up as against all and each of said defendants affected thereby and to which they are required to plead by answer or reply.

That shortly subsequent to the service of such amended answer and long prior hereto the plaintiffs, by Messrs. Hooper & Hooper and by Greene & Vroman, made reply thereto, and also the defendants who appeared as aforesaid by Alfred L. Cary, attorney, and David S. Ordway, of counsel, filed their reply to such counter-claims in the nature of an answer thereto, treating the same as a cross-complaint, excepting the defendants Henry Hewitt, Jr., and
205 William P. Hewitt; that shortly prior hereto, on or about the 1st day of April, 1892, a notice in writing, signed by the said David S. Ordway, of counsel, was served upon deponent as attorney for said canal company, whereby notice was given to said defendant canal company and to deponent that the said David S. Ordway was not retained and never employed by Henry Hewitt, Jr., and William P. Hewitt to appear or make answer for them to the said counter-claims in the nature of a cross-complaint of the said defendant canal company or against the matters alleged therein; that, other than the service on said Cary and Ordway, there has

been no service of said amended answer on the defendants Henry Hewitt, Jr., and William P. Hewitt.

Deponent further says that it appears from the answer to the plaintiffs' complaint made by the defendants appearing by the said Alfred L. Cary, attorney, and David S. Ordway, of counsel, that subsequent to the commencement of said action and the service of process therein the defendant Anna Hunt sold her entire interest in the premises affected by this suit to the Kaukauna Water Power Company, and that she has no longer interest therein and no longer is a necessary party thereto.

Deponent further says that it appears from the plaintiffs' complaint herein that the defendants James C. Delaney, Michael Kline, and James H. Elmore were made parties defendant hereto on the ground that they were alleged to be tenants under the Kaukauna Water Power Company of some part of the water-power property in question, but that deponent is informed and believes that said defendants did not have or at least do not now have any interest in said premises whatsoever as tenants or otherwise.

Deponent further says that it appears from the plaintiffs' complaint herein that the defendants Aug. L. Smith and Asel W. Patten were made defendants therein because of an alleged interest
206 as mortgagees named in a mortgage on the George F. Kelso pulp mill and power, now held by the Reese Pulp Company, and neither of whom has been served with a copy of said amended answer; and it appears that the defendant Charles Fairchild was made defendant as mortgagee of Harriet S. Edwards of some part of the property in question, upon whom no copy of said amended answer has been served. Deponent further says that no copy of said amended answer has been served upon the defendants Henry D. Smith and Herman Erb, who were made such as trustees under a trust mortgage upon the property of the said canal company, nor upon the defendants The Kaukauna Paper Company, American Pulp Company, John Jansen, Peter Reuter, and Alexander Reuter, who were made such as being tenants of the said canal company of some part of the water powers in question; that the said Aug. L. Smith, Henry Hewitt, Jr., and William P. Hewitt were charged to be interested, as hereinbefore stated, and also charged to be tenants of said canal company; that all of the defendants made such as being tenants under the said canal company exclusively are, as deponent believes, unaffected by the matters set up in the counter-claims aforesaid; that the relief prayed upon such counter-claims by the canal company will be relief in favor of and not against their interests.

Deponent further says that he is advised that the practice as to whether the counter-claims set up in the amended answer aforesaid do by the prayer of such answer give sufficient notice to the co-defendants affected thereby to require them to make their reply or, treating it as a cross-complaint, their answer is not settled.

Wherefore deponent prays that an order be entered directing service of an order upon the codefendants affected by said counter-

claims, and who as aforesaid appear to retain an interest in the
207 property affected by said action, and who have not already made reply or answer to the same, requiring them to reply or answer to such counter-claims in the nature of a cross-complaint within a time thereafter to be fixed by the court, not less than ten nor more than twenty days from the service of the same.

B. J. STEVENS.

Subscribed and sworn to before me this 9th day of May, A. D. 1892.

JESSIE C. SUTCLIFFE,
Notary Public, Dane Co., Wis.

208 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY and Others, Impleaded with The Green Bay and Mississippi Canal Company, Defendants.

On reading and filing the affidavit of B. J. Stevens, hereto annexed, and upon all pleadings, papers, and proceedings filed, served, or made in this action, and on motion of B. J. Stevens, attorney for the Green Bay and Mississippi Canal Company, it is—

Ordered that the defendants in the action in said affidavit entitled show cause before this court at the court-house, in the city of Appleton, in said county, on the twenty-first day of May, A. D. 1892, at the opening of court on that day, or as soon thereafter as counsel can be heard, why the defendants in said action who have an interest in the property or any part thereof affected by said action and affected by the relief prayed for in the amended answer of the canal company and who have not made reply or answer to the counter-claims set up in the amended answer of the Green Bay and Mississippi Canal Company therein should not, by order of the court, be required to treat the same as a cross-complaint, with leave to make answer or reply to the counter-claims aforesaid within a time to be fixed by the court after service of such order, and where no amended answer has been previously served after service therewith of a copy of such amended answer, and why the defend-
ants who by said affidavit no longer appear to have an in-
209 terest in the property affected by said action should not be dismissed therefrom as defendants in such cross-action, and why the defendants who, as trustees under the canal company or as tenants under the canal company, having no other interest in the premises affected by said action should not be treated as having no interest hostile to the granting of the relief prayed based upon such counter-claims, or, if objection thereto be made on the part of such trustees or tenants or others, why they should not be served with like copy of answer and order, and why the canal company,

defendant, should not have such other or further order or relief in the premises as shall be just and proper.

And it is further ordered that a copy of this order to show cause be served upon the attorneys of the plaintiffs and of all of the defendants who have appeared in said action other than the attorneys of David McCartney, who have waived service of notice, at least forty-eight hours prior to the hearing hereof, and that such service of this order shall be sufficient notice of such hearing.

Dated Appleton, May 13th, 1892.

By the court:

JOHN GOODLAND, *Judge.*

Endorsement: #3516. Circuit court, Outagamie county. Patten Paper Company (Limited) & others, pl'ffs, *vs.* Kaukauna Water Power Co., Green Bay & Mississippi Canal Co., & others, def'ts. Affidavit & order to show cause, &c. Original. B. J. Stevens & E. Mariner, att'ys for G. B. & M. C. Co. Served by copy May 19th, 1892. Moses Hooper, for plaintiffs; P. R. Barnes, for Reese Pulp Co., M. H.; Vroman & Sale, for McCartney, M. H. Filed this 21st day of May, 1892. H. J. Mulholland, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

210 STATE OF WISCONSIN:

In Circuit Court for Outagamie Co.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY and Others, Impleaded with The Green Bay and Mississippi Canal Company, Being Cross-action Canal Co., Pl'ff, ag'st Pl'ff Patten Paper Co. *et al.*, &c., Def'ts in said Action Affected, Defendants.

We hereby admit due personal service of a copy of the affidavit and order to show cause in the above-entitled action, made returnable on the 21st day of May, 1892, by the order of Judge Goodland dated May 13th, 1892.

ALFRED L. CARY,
Attorney for Certain Defendants in said Action for Whom He Has Appeared.

STATE OF WISCONSIN, } ss:
Milwaukee County, }

Charles E. Smith, being duly sworn, says that he served a copy of the affidavit and order to show cause in the above-entitled action upon the Hon. F. C. Winkler by leaving the same at his office with a person in charge thereof on the 18th day of May, 1892.

CHAS. E. SMITH.

Subscribed and sworn before me this 20th day of May, 1892.

WILLIAM MARINER,
Notary Public, Milwaukee County, Wisconsin.

211 STATE OF WISCONSIN:

In Circuit Court for Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, The Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago and Northwestern Railway Company, Milwaukee, Lake Shore and Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymer Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

This matter coming on to be heard pursuant to order to show cause made herein on the 13th day of May instant, and it appearing by the written admissions of Alfred L. Cary, attorney for the Kaukauna Water Power Company and other defendants, and of Moses Hooper, attorney for plaintiffs; P. R. Barnes, attorney for Reese Pulp Company, defendant; by Moses Hooper and Vroman & Sale, attorneys for David McCartney, defendant, by Moses Hooper, and the affidavit of Charles E. Smith showing service upon Messrs. Winkler, Flanders, Smith, Bottum & Vilas, attorneys for The Chicago and Northwestern Railway Company, defendant, that said order to show cause was served, all more than forty-eight hours prior
212 to the time fixed for such hearing, and being the attorneys for all of the parties who have appeared herein, and there being no appearance at this hearing on the part of any of the parties so served, and The Green Bay and Mississippi Canal Company, defendant, answering in the nature of a cross-complaint, appearing by attorney—

Now, therefore, on motion of B. J. Stevens, attorney for the Green Bay and Mississippi Canal Company, it is—

Ordered that upon service of a copy of this order, together with a copy of the amended answer of the Green Bay and Mi[illegible]ippi Canal Company, upon the defendants affected thereby, he[illegible]nafter named, they and each of them are hereby required to treat the said amended answer so served, pursuant hereto, as a cross-complaint and have leave, if they are so advised, to make reply to the counter-claims thereof in the nature of an answer to the same within twenty days from and after service of a copy of this order as aforesaid, and generally to defend such counter-claims or cross-action, and that they take notice that in case of failure so to do judgment will be rendered against them and each of them according to the prayer and demand of such amended answer.

And it appearing that the following-named defendants are affected by such counter-claims, it is ordered that service of order and

amended answer as aforesaid be made upon them and each of them, to wit, Henry Hewitt, Jr., William P. Hewitt, Aug. L. Smith, Asel W. Patten, and Charles Fairchild, David McCartney, Reese Pulp Company, and the Chicago and Northwestern Railway Company.

And it appearing that the defendants Anna Hunt, James H. Elmore, James C. Delaney, and Michael Khne have not appeared in the original action above entitled, and now do not appear to be affected by such counter-claims, it is ordered that service of such amended answer upon them be waived.

213 And it appearing that all other of the defendants in said original action, excepting those hereinbefore named and those who have already made reply to such counter-claims, are interested in the premises affected by such action only as trustees of or tenants under the said canal company, it is ordered that service upon them be waived.

Leave is hereby given at any time within twenty days from this date to any of the defendants in this action, whether service upon them be hereby waived or not, to make any proper defence to such counter claims or cross-action of the said answering defendant as they shall be advised.

By the court:

JOHN GOODLAND, *Judge.*

Dated Appleton, May 21st, A. D. 1892.

Endorsement: 3516. Circuit court, Outagamie county. Patten Paper Company (Limited) and others, pl'ffs, *vs.* Kaukauna Water Power Co., Green Bay & Mississippi Canal Co., & others, def'ts. Order requiring certain defendants to answer counter-claims in canal Co. answer. Filed this 21st day of May, 1892, & recorded, vol. 11, p. 99. H. J. Mulholland, clerk. B. J. Stevens & E. Mariner, att'ys for G. B. & M. C. Co. Filed Jun- 26, 1894. Clarence Kellogg, clerk supreme court Wis.

214 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded with Others, Defendants.

I.

The reply of the plaintiffs to the first counter-claim in the amended answer of the Green Bay & Mississippi Canal Company herein shows to this court—

The plaintiffs admit that Fox river is a meandered stream and navigable in fact, save at such points therein where rapids make the navigation thereof impossible; but deny that said river, at the Kaukauna rapids, from either the present or original Government dam at the head to the foot of said rapids, is or ever was navigable in fact. The plaintiffs admit that the islands mentioned in said

counter-claim were meandered; that to secure slack-water navigation by said rapids the building of dams, locks, and canals was necessary; that the act of Congress approved Aug. 8, 1846, granting lands for the improvement of said river, and the acts of the legislature accepting said grant and creating the board of public works were enacted; that said board adopted a plan for such improvement; that at the time of such adoption the lands on each side of said river and the islands therein at said rapids were held and owned by different owners in severalty. The plaintiffs deny that when said lands and islands were thus held in severalty it was impracticable to utilize as water power upon them or any of
215 them only an unimportant part of the flow of said river. The plaintiffs deny that at the time the State began said work of improvement or at any other time no person had the right to build a dam across said river, and allege that every riparian proprietor on said river at said Kaukauna rapids always had and still has a right to build and maintain a dam therein on his own land to utilize the flow of water thereon, provided such dam was and is not injurious to the property or riparian rights of others; that such dam would not and does not in any manner interfere with or affect navigation in said river.

The plaintiffs admit the original construction of the dam, canal, and locks mentioned in said first counter-claim to connect slack water in said river above and below said Kaukauna rapids, and the acquisition by purchase or otherwise of lands for the location thereon of said dam and canal; but they deny that said land or any land, save as hereinafter mentioned, was acquired for the utilization of the water power created by said dam or canal, and deny that any water power was or is created by said canal. They allege that said dam extended from the south shore of said river, at or near the head of said rapids, in a northerly direction to within a short distance of the north shore of said river, and that said canal extended from said northerly end of said dam to the slack water below said rapids; that for a distance for about nine hundred and fifty feet down said river from said northerly end of said dam said canal was built in part in the bed of said river, next the northerly shore thereof, because hills or bluffs along said shore made such construction more economical, and that beyond said distance down river said canal lays on the mainland on the north side of the river, distant from 50 to 500 feet therefrom; that the southerly retaining wall of said canal from said northerly end of said dam downstream for said distance of about 950 feet is no part of said dam or of the new dam
216 subsequently built as hereinafter stated, but an embankment of said canal, and the flow of said river not used for navigation or hydraulic purposes, as hereinafter stated, was always and still is wholly over the top of said dams and no part of it over said embankment. The plaintiffs deny that the opening between said northerly end of said dam and the northerly shore of said river or the mouth of said canal at said point or said canal between its mouth at said end of said dam and the lock proper mentioned in said first counter-claim was ever sufficient or of sufficient capacity

to pass the whole flow of said river. The plaintiffs deny that the State ever acquired any of the land mentioned in said counterclaim between the upper end of said canal and the northerly line of the south half of private claim one, save such part thereof as was reasonably necessary for the construction and maintenance of said dam and canal, and deny that the Green Bay & Mississippi Canal Company or its predecessors in interest ever acquired said land or any part thereof or interest therein to utilize the water power created by said dam or canal or ever acquired any right to use or utilize said water power or any part thereof, save at said dam or within such proximity thereto as not to impair or destroy any water power created by a fall in said river below said dam. The plaintiffs deny that the State, but admit that its grantees, caused a part of said land to be platted into so-called water-power or mill lots, and upon a few of them caused openings or water weirs to be inserted in the embankment of said canal, and deny that most of said openings or weirs were constructed below the head of Island No. 3. The plaintiffs deny that the said canal company or any of its predecessors in interest ever acquired any right to use or utilize for hydraulic purposes the water power created by said dam and improvement upon or through said mill lots or weirs so as to destroy or
217 impair any other water power created by the fall in said river below said dam. The plaintiffs admit that heretofore the said canal company or its predecessors in interest leased some of said mill lots with the water power claimed to be appurtenant thereto, but deny that said land or lots or any part thereof was or were purchased, platted, prepared for water uses, offered for sale or lease, or leased with the acquiescence of those plaintiffs or either or any of them; that the only parties who now use the water power created by said dam and improvement as originally built or since rebuilt for hydraulic purposes from said canal upon or through said land or lots are the defendants A. L. Smith, The Kaukauna Paper Company, The American Pulp Company, and The Kaukauna Lumber and Manufacturing Company, all of whom commenced said use since the year 1885 except the said A. L. Smith and the Kaukauna Paper Company, who prior to said year used but a small part of said water power; that the said last-named parties, for the time they have thus used the said water power, have used but a small part thereof and only about one-fourth of the flow of said river, and the discharge of water into said river in such use did not and does not necessarily materially change the flow of water down said river which creates the water powers in which plaintiffs are interested as stated in the complaint, as it would flow if it passed over the top of said Government dam; but if the said canal company or its grantees or lessees should use the whole water power created by said dam and improvement along said canal below the upper point on said river where a part of it is now used as aforesaid or should *it* they or any of them so use more of said power than is now used, the discharge of the flow of said river in said use would destroy or greatly impair the said water powers below said dam in which these plaintiffs are interested; that, as plaintiffs are informed and believe,

the water power created by said dam and improvement could
218 be utilized at or near said dam above the points on said canal where it is now in part utilized as aforesaid without unreasonable difficulty or expense and without changing the flow of said river below said dam to the injury of any riparian proprietor; but the said canal company claim the right to utilize it at remote points from said dam down said canal to gain the fall in said river between said dam and the points of utilization; that such claim, if exercised by the use of the whole flow of the river at a point between the mouth of said north channel, would destroy all the water powers of all owners of Islands One, Two, Three, and Four, and of the south shore over against the same.

The plaintiffs admit that said dam and canal were constructed by Morgan L. Martin under the acts of the legislature; that chapter 98 of the Laws of 1853 was enacted, and that the corporators therein named complied with the conditions thereof, and the secretary of state made his certificate as therein provided; that said dam and canal were then partly completed, and that the Fox and Wisconsin Improvement Company completed said works, as then contemplated and as enlarged by the acts of the legislature. The plaintiffs admit the execution of the mortgage, trust deed, certificate of the governor that such deed had been made, resignation of Alexander Mitchell and appointment of Moses M. Davis, and the foreclosure and sale mentioned in said counter-claim. The plaintiffs deny that by virtue thereof any water power at said Kaukauna rapids was conveyed or transferred save that created by said original Government dam, or that any right to use said power was conveyed or transferred save at said dam or within such distance below it as would not materially change the flow of the surplus water of said river not needed for navigation below said dam. The plaintiffs admit the incorporation of said canal company, the con-
219 veyance to it, its entry into possession of the property conveyed, the passage of the act of Congress approved July 7, 1870, and the act of the legislature approved March 23, 1871, the selection of the board of arbitrators and their report and that of the Secretary of War, the appropriation by Congress, the payment to said canal company and its conveyance to the United States mentioned in said counter-claim, but deny that by reason thereof or otherwise said canal company is the owner or entitled to the exclusive use of the water or hydraulic power supported, maintained, or furnished by said Government dam, save as hereinafter specified, and deny that its right to use the portion of said power hereinafter mentioned is subject only to the right of the United States to draw only as much water from above said dam as is necessary to fill said canal for the purposes of navigation. The plaintiffs deny that the United States has the use and control of said dam and canal and its embankments and of the waters therein for the purposes of navigation only, and deny that said canal company has the right to the exclusive use of the same or title thereto or possession thereof for the purpose of using all surplus water drawn or to be drawn from said pond above said dam over and above the amount necessary

for use in navigation. The plaintiffs allege that the only water power created by the Government dam and improvement at said Kaukauna rapids which the said canal company owns or is entitled to use, if any, otherwise than as a riparian owner, is such of the water power created by the original dam and improvement at said place as was embraced in said appraisal and report of said board of arbitrators, the said decision and report of the Secretary of War, and the exception or reservation in said conveyance to the United States, and its only right to use said dam, canal, or improvement is such as is embraced in said appraisal, reports, decision, and reservation or exception; that said appraisal, reports,
220 decision, and exception or reservation only embraced the right to use the surplus water of said river not needed for navigation, estimated at 2,500 horse-power, at the dam.

That in 1875 and 1876 the United States built another dam for the purposes of navigation about 100 feet below said original dam. The plaintiffs deny that said canal company ever acquired any right to use said water power created by either said original or said new dam so as to destroy or substantially impair the water power of any riparian proprietor below said dams without his consent. The plaintiffs deny that more than an insignificant part of said water power created by said original dam and improvement was used soon after their completion, and deny that more than such part of the power created by either of said dams was used prior to about the year 1886, and deny that the power utilized since said year could not or cannot now be utilized sufficiently near said new dam to be returned to the river above the head of Island No. 4 or above the points at which it is now utilized.

The plaintiffs deny that during all or any of the time since the building of said old dam the said canal company or any or either of its predecessors in interest have notoriously or openly or in any manner or to the knowledge of plaintiffs or either of them claimed, exercised, or proclaimed any dominion or control over or title to or ownership of all or any of the hydraulic power furnished by said dams or either of them save that actually used as aforesaid and save the use of the flow of the river at the foot of the dam; that no claim was ever made by said canal company or either of its predecessors in interest until the making of said counter-claim that they or either of them had in any way condemned or subjected to their dominion, otherwise than by purchase, any riparian
221 right or any right in the hydraulic power in said river appurtenant to Islands Nos. 1, 2, 3, or 4 or appurtenant to the north bank of said river below the point where the said retaining wall constituting the south bank of said canal strikes the north bank of said river, which is several hundred feet above the mouth of the said middle channel.

And, save as hereinbefore expressly admitted or denied, the plaintiffs have no knowledge or information sufficient to form a belief as to the truth of, and therefor deny, each and every allegation in said first counter-claim contained.

II.

And, for a reply to the second counter-claim contained in the answer of said Green Bay and Mississippi Canal Company, the plaintiffs show to this court that they were not, nor was either of them, parties to the action in said counter-claim mentioned.

The plaintiffs allege that the act of the State of Wisconsin, approved August 8th, 1848, organizing the board of public works and providing that "whenever a water power shall be created by reason of any dam erected or other improvements made on any of said rivers such water-power shall belong to the State, subject to future action of the legislature," and the decision of the supreme court of the State of Wisconsin in construing the same only applies to such water powers as are created by the dam forming a part of the improvement and maintained at the dams themselves and such as are appurtenant to the shores of the river seized, taken, and appropriated by said board of public works, which do not include the water power owned or leased by these plaintiffs and mentioned in their complaint.

MOSES HOOPER,
Plaintiffs' Attorney.

222 Endorsement: Original. Circuit court, Outagamie county. Patten Paper Co. (Limited) *et al.*, plaintiffs, *vs.* Green Bay & Mississippi Canal Co., impleaded, &c., defendants. Reply. Due service of the within reply admitted this 15th day of October, 1891. B. J. Stevens (E. Mariner, of counsel), att'ys for canal Co. Greene & Vroman, of counsel, Green Bay, Wis. Circuit court, Outagamie county. Filed Oct. 17, 1891. H. J. Mulholland, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

223 STATE OF WISCONSIN:

In Circuit Court for the County of Outagamie.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

The above-named defendants, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore &

Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, answer the amended cross-complaint of the above-named defendant, Green Bay and Mississippi Canal Company, as follows:

To the second and separate defense in said answer or cross-complaint contained they answer and state—

That the original or first dam which was constructed across the Fox river at Kaukauna was completed in 1855 and was located upstream from the present dam. The north end of such original dam abutted upon the north bank of the Fox river about 100 feet
224 upstream from where the present dam is now located; that the south end of such original dam abutted on the south bank of Fox river at a point about 40 feet upstream from the point of abuttal of the present dam as now located.

That the Government canal as originally constructed was cut through solid land from a point about 100 feet upstream from the northerly end of said original dam, passing the north end thereof, and thence downstream; said canal was cut through and lay in solid earth for a distance downstream below the north end of said original dam of about 100 feet, and that said original dam, as the same was first constructed and as the same remained in use until about 1875, extended from bank to bank of said river, and its north end abutted at its full height upon the north bank of said Fox river; that the retaining wall which supports the south bank of said canal from below the lower or downstream side of the present dam was no part of said original dam as the same was so originally constructed; that no part of said Government canal as originally excavated lay in the bed of Fox river until it reached a point at least 100 feet downstream from the north abuttal of said original dam upon the north bank of said Fox river; that said dam was a complete structure by itself as originally constructed as aforesaid, ending at its said abuttal upon the north bank of said river, and so remained until the building of the new or present dam by the United States, in or about the year 1875.

That said canal as originally constructed or excavated was only 100 feet in width at the top of the banks thereof, with sufficient slope of banks to support and maintain the same, was only of sufficient depth to pass through the same water craft drawing about three feet of water, and there was constructed and for a number of years after 1855 maintained, in the head or mouth thereof, at
225 a point about from 50 to 75 feet upstream from the northerly abuttal of said original dam upon said north bank, a guard-lock, so called, which guard-lock was constructed with gates at both the upper or upstream and lower or downstream ends thereof for the purpose of regulating the flow of water into the said canal and for the purpose of protecting said canal against accidents and unusual floods of water, and also for the purpose of excluding, in case of necessity, all water from the said canal. The said guard-lock was about 75 feet in length and about 25 feet in width on the inside thereof, and the floor or bottom thereof was only about 4 feet below

the surface of the water in said canal above or upstream from said guard-lock and would not allow of and was not of sufficient size or capacity for the passage down the same of one-half of the flow of said Fox river at an ordinary stage for hydraulic purposes in addition to water then necessary to be passed through said canal for the purposes of navigation.

That at the time of the completion of said canal, in about the year 1855, and from thence on until the time of the commencement of this suit the amount of water necessary to be introduced into and carried down said canal for the purposes of navigation was only about one thousand cubic feet per minute, while the whole flow of said river at an ordinary stage was and is about 150,000 cubic feet per minute.

These defendants upon information and belief state that the capacity of said Government canal as the same was originally constructed, in 1855, and as the same remained in use for at least twenty years next thereafter was not sufficient to admit of passing into or down the same one-half of the whole flow of said Fox river at an ordinary stage of water.

These defendants further state that the Kaukauna Water
226 Power Company at the time of the commencement of this action and at the time of the filing of said amended answer or cross-bill by said defendant, Green Bay & Mississippi Canal Company, was the owner of all the land bordering on the south side of the south channel of said Fox river from a point at least 1,400 feet above or upstream from the present Government dam downstream along the rapids of said Fox river about half a mile to slack water below said Kaukauna rapids; that in said Fox river, on the lands of said Kaukauna Water Power Company, from the said Government dam downstream to said slack water in each of said channels, is a fall of 30 feet or more, and the water of said river as it passes down said rapids is all susceptible of use by means of dams and otherwise on the lands of said Kaukauna Water Power Company for hydraulic purposes; that said lands were purchased from the United States Government in 1835 and patents in about the year 1837 duly issued thereupon to the purchasers thereof or their assigns, and that said Kaukauna Water Power Company derives its title to all of said lands bordering the said south side of said south channel of said Fox river through mesne conveyances from said original patentees, and are now and have been ever since about the year 1880 in possession thereof.

And these defendants further state that at the time of the commencement of this action and of the filing of said answer or cross-complaint by said Green Bay & Mississippi Canal Company the said Kaukauna Water Power Company was the owner in fee of the undivided three-fourths of Island No. 1 in said complaint mentioned.

That at the same time said Kaukauna Water Power Company was the owner in fee-simple of all of Island No. 2 mentioned in the 22nd paragraph of said complaint.

That at the time last mentioned said Kaukauna Water Power

Company was the owner in fee of all of said Island No. 3
227 except about one undivided quarter thereof then owned by the Green Bay & Mississippi Canal Company and subject to the leases of a small part thereof set out in the complaint.

That at the same time last aforesaid the said Kaukauna Water Power Company was the owner in fee of all of said Island No. 4 except about one-quarter, undivided, thereof then owned by the said Green Bay & Mississippi Canal Company.

That in the north channel of said Fox river, from the foot of the present Government dam downstream to the mouth of the so-called middle channel, over against Island No. 4, are rapids and a fall of about and at least 6 feet.

That from the mouth of the said middle channel (which passes between said Islands 3 and 4) downstream along the so-called north channel of said Fox river, over against Island No. 3, and thence on down to slack water below said Kaukauna rapids are rapids and a fall of at least 25 feet, over which the water of said river passes; all which is and always was susceptible of being improved on the land of said Kaukauna Water Power Company so as to create water power for hydraulic purposes then and now capable of being used upon the lands of said Kaukauna Water Power Company bordering said channels, and which said water power was and is of great value, to wit, a sum or amount of not less than one hundred thousand dollars.

And these defendants further state that no claim was ever made by the State of Wisconsin or by the board of public works or by the Fox & Wisconsin Improvement Company or by the Green Bay & Mississippi Canal Company until the making of said counterclaim or so-called cross-complaint that the State of Wisconsin or said board of public works or Fox & Wisconsin Improvement Company or Green Bay & Mississippi Canal Company had in any way
taken, condemned, or under the provisions of said act of
228 August 8th, 1848, subjected to their dominion or ownership any land or riparian rights or any right to the hydraulic power of said river below said Government dam.

And these defendants further state that neither the State of Wisconsin, the board of public works, the Fox & Wisconsin Improvement Company, or the Green Bay and Mississippi Canal Company ever acquired by, through, or under said act of August 8, 1848, or otherwise, except by purchase from riparian owners, any right to or interest in the bed of Fox river or to any of the water or to the use of any of the water of said Fox river except for the purposes of navigation from the present Government dam down to slack water below said Kaukauna rapids.

And these defendants further, upon information and belief, state that no condemnation proceedings were ever taken by the State of Wisconsin or by said Green Bay and Mississippi Canal Company or by said Fox and Wisconsin Improvement Company or by said board of public works for the purpose of acquiring any right or title to any interests, either of land or water, in or upon said river at Kaukauna.

And these defendants further state that neither the State of Wisconsin, said board of public works, said Fox and Wisconsin Improvement Company, or said Green Bay & Mississippi Canal Company ever had any power or authority, either under said act of the State of Wisconsin of August 8th, 1848, or otherwise, except by purchase from the owners, to appropriate to their own use for private or hydraulic purposes any of the water of said river below or downstream from said Government dam.

And these defendants allege that the said act of the State of Wisconsin of August 8th, 1848, in so far as it may be claimed that the same gives or transfers to said Green Bay & Mississippi Canal Company the right to divert the water of said Fox river down the said Government canal and away from the lands of the Kaukauna
229 Water Power Company, except for the purposes of navigation, as in said counter-claim or cross-complaint alleged or otherwise, is unconstitutional and void in that it contravenes, first, the provisions of the constitution of the State of Wisconsin, and, second, the provisions of the Constitution of the United States, in that it takes or attempts to take private property for private use or for public use without any valid or legal provision being made in said act of 1848 or elsewhere or in any other way for the payment to or obtaining payment by the owner of said water power and property so taken of the just compensation required by the Constitution both of the United States and the State of Wisconsin to be paid upon the taking of private property for public use, and because said act of August 8, 1848, if held valid for the diversion or taking of any of the water of said Fox river into and down said Government canal past the said lands of said Kaukauna Water Power Company, except for the purposes of navigation, deprives said last-named company of its property without due process of law, contrary to the provision of the 14th amendment of the Constitution of the United States.

And these defendants, further answering the said cross-complaint, deny all that part at folio 17 thereof in these words: "That at the time the State began this work of improvement no person had the right to build a dam across said river."

And these defendants, answering said cross-complaint, further state that the said Fox river, from a point about 100 feet above said original dam downstream to slack water below said Kaukauna rapids, a distance of about three-fourths of a mile, was never, in a state of nature, navigable; that the bed of said river for such entire distance was and is occupied by rapids and was and is composed of rock and bowlders, the water passing over, among, and down the same very swiftly, and most of said distance at a depth of from
230 one to two feet only down all of said different channels, turning and winding from point to point between such bowlders, creating whirlpools and eddies and a current so swift and strong that it was never possible for water craft of any kind to pass up and down the same with safety, and that from a time whence the memory of man runneth not to the contrary until the completion of said Government canal all com-odities or merchandise transported up or

down said Fox river were passed around said entire rapids over the so-called portage from above said rapids down into slack water below the same, and that in fact the said Fox river was not navigable in a state of nature for said entire distance occupied by said Kaukauna rapids; that the natural bed of said river has not been used for purposes of navigation or the passing over the same of logs, rafts, or any other kinds of property since the year 1846, and no water craft (except in one or two cases, when a Durham boat or bateau may have been propelled by hand) has ever passed over said rapids during the period of time last aforesaid; these defendants therefore deny that the said Fox river is or ever was in fact a navigable stream along down the said Kaukauna rapids.

And these defendants, further answering the said cross-bill, aver that the said Kaukauna Water Power Company, by virtue of its ownership as aforesaid of the banks of said various channels of said river, is the owner of the soil and bed of Fox river to the center thereof, where it owns, as above stated, the land upon only one side of said river or of said various channels, and is the owner of its said undivided interest in the entire soil and bed of said Fox river and its said various channels, where it is the owner of an undivided part of both banks of said channels, as above hereinbefore stated, and that it has a right to make such use of the bed of said stream and said various channels within and to the extent of its said
231 ownership as it sees fit, provided only that it does not interfere with the public use of said stream for the purposes of navigation or with the rights of other riparian owners upon its banks, and that the construction of a dam or dams at any point across said river or any of said various channels below said Government dam will not interfere at all with any public use of said river.

And these defendants, in further answering said cross-complaint, state that the said Green Bay & Mississippi Canal Company is not and never was the owner of any land upon the south side of said Fox river from a point above said Government dam downstream to slack water below said Kaukauna rapids, and that it never was possible for said Green Bay & Mississippi Canal Company or any or either of its predecessors in title to use any of the water of said Fox river for hydraulic purposes at any point on the south side of said Fox river.

And these defendants also deny the statement in the 18th and 19th folios in said cross-complaint contained, to wit:

"It was determined to build a low dam beginning on the south side near the head of the rapids, extending downstream on or near the south bank of the river across lots 8, 7, and 6, and onto lot 5, section 22, thence extending at about a right angle with the south bank nearly across the river, leaving an opening at the north end through which the whole water of the river could pass, and into which opening, during the period of construction, a guard-lock (so called) should, for safety sake, be placed, and thence further extending down the bed of the river parallel to and in part near to and in part on the north bank to a certain point at which should be

placed a lock proper, leaving between such last-mentioned extension of dam and said north bank a channel sufficiently large to fully pass the ordinary flow of the river, and which dam, by the aid of such lock proper, should uphold and sustain the waters of said river throughout the full extent of said dam at one and the same level;" and with reference thereto these defendants state that said dam extended across said river and ended at its north abuttal upon the north bank of said river against high land, and that the claimed extension of said pond was and is a canal and one of the canals constructed by the State for the purposes of improving the navigation of said Fox river, pursuant to the provisions of said act
232 of August 8th, 1848.

And these defendants state that none of the water of said Fox river, except what is necessarily taken into said canal above said Government dam for the purposes of navigation (being only a flow of about one thousand cubic feet per minute), is or ever was necessary for navigation purposes below said dam, but that the whole flow of said river, except such small part thereof as is so, as above stated, necessary for the purposes of navigation, should, if used by said Green Bay & Mississippi Canal Company for private or hydraulic purposes, be used by it at said Government dam, and all of the water so used by it or its lessees should be returned to the bed of the stream immediately at the foot of said dam above the head of Island Number Four (4), so that the same and in such manner that the same may be distributed over and down the various channels of said river as and in the same proportions and to the same depth as the same was wont to run in a state of nature.

And these defendants, further answering said cross-complaint, deny all that part thereof in the 27th and 28th folios thereof in these words, viz: "And that such water powers, to wit, all of the powers created by said dam and canal, had been taken and appropriated by the State under said acts of legislation to the use of the State and its grantee, and were claimed to be their exclusive property, and did offer the same for sale or lease to all persons desiring to purchase or lease the same, to be used on said mill lots, and did lease portions of the same, and so did with the knowledge and, according to the best of defendants' knowledge, information, and belief, with the acquiescence of said owners of said lands on either bank and of the islands in said river, and ever since then said Fox & Wisconsin Improvement Company and the grantees and assigns of said State and of said Fox & Wisconsin Improvement Com-
233 pany have continued to so shut off the use of such water power upon and from the south side of the river and to so lease powers on the north side and to so hold out to the world and to so declare with reference to said mill lots and water powers, and all this with the knowledge and until about five years prior to the commencement of this action with like acquiescence or apparent acquiescence of all owners of lands upon the banks of said river and of the islands therein." And these defendants, with reference thereto, state that prior to the year 1868 neither the State of Wisconsin, the Fox & Wisconsin Improvement Company, or said Green Bay &

Mississippi Canal Company ever used or leased to be used from said Government canal for hydraulic purposes on the north side of said river or at any other place or point at Kaukauna to exceed 100-horse power of the water of said Fox river. Prior to 1868 but one lease of water power at Kaukauna had ever been made; such lease was of but one-hundred-horse power; was made to parties named Cord & Gray and dated June 3rd, 1861; was made by the trustees of the Fox and Wisconsin Improvement Company and Morgan L. Martin and wife, lessors; that the entire water power created by said Government dam at the point of its location, where said guard-lock was so inserted, was about 2,500-horse power; that, as these defendants are informed and believe, no other water power was used or leases thereof made by the State of Wisconsin, the Fox & Wisconsin Improvement Company, or the Green Bay & Mississippi Canal Company of water to be used upon the north side of said Fox river or elsewhere at Kaukauna prior to the year 1882, excepting the following, viz: 1, a lease from the Green Bay & Mississippi Canal Company to John Jansen of about 100-horse power, made in or about the year 1868, of water to be used on lot 7 of Jennie's plat and drawn from said Government canal; 2, a lease from the Green Bay & Mississippi Canal Company to Peter Reuter and A. L.
234 Reuter, dated about the 1st of May, 1869, of 50-horse power, to be used on lots 8 and 9 of said Jennie's plat; 3, a lease by the Green Bay & Mississippi Canal Company to one Burns, dated in November, 1880, of 30-horse power, to be used on lot 1 of said Jennie's plat, for the propelling of a grist or flour mill, which lease was assigned to Augustus L. Smith on or about the 18th of September, 1882.

And these defendants further state that at the time of the making of all of the aforesaid leases the Fox & Wisconsin Improvement Company or the Green Bay & Mississippi Canal Company were the owners of all of the land bordering on the north side of said Fox river from above said Government dam down to said lot 1 of said Jennie's plat, and were also the owners of the undivided half of all of the land bordering the north side of said Fox river from the upstream line of said lot 1 of said Jennie's plat downstream to a point a few rods below or downstream from the first lock now existing in said canal and below where all of the water so leased was then and is now taken from said Government canal and discharged into the Fox river; that the water so leased to be used upon said Government canal prior to 1882 *were* but a small proportion of one-half of the water of said Fox river, and that neither the said State of Wisconsin or Fox & Wisconsin Improvement Company or Green Bay & Mississippi Canal Company ever prior to the commencement of this action used or leased to be used on the north side of the river or elsewhere at Kaukauna the one-half of the flow of the stream of which they were the owners as riparian proprietors, and never in any visible, public, or notorious way or manner asserted or claimed any right to the use of over one-half of the flow of said river until after the commencement of this action.

And these defendants deny that the said Green Bay & Mississippi

Canal Company or any other party has any lawful right to
235 divert down the said Government canal past the said lands of the defendant The Kaukauna Water Power Company any of the water of said river except for the purposes of navigation, and they allege that if the said canal company is by this court adjudged to be entitled to so divert down said canal the whole flow of the river all the water powers of all owners of Islands 1, 2, 3, and 4 and of the south bank of said river below said dam will be totally destroyed and all of said lands rendered substantially worthless.

And these defendants, further answering said cross-complaint, state that the only water power which the said Green Bay & Mississippi Canal Company became the owner of under and by virtue of the said act of the State of Wisconsin of August 8th, 1848, was that which was created by and immediately at said original dam, without the addition of any increase thereof by fall in the river below said dam, and which at the time of the completion of said dam in 1855, and also at the time of the transfer of said canal and waterway to the United States Government, amounted to only about 2,500-horse power.

And these defendants, further answering said cross-complaint, deny all of the same and each and every part thereof contained in folios 64, 65, and 66 in these words: "That during all the time since the building of said dam commenced in 1851 and completed in or about 1855 the State of Wisconsin, the Fox & Wisconsin Improvement Company, its trustees under said trust deed, and this defendant have notoriously, openly, and in the most public manner and to the knowledge of all riparian owners on said river claimed, exercised, and proclaimed exclusive dominion and control over and title to and ownership of all the hydraulic power or water power furnished by said dam and by all other dams on said river built and maintained by them from time to time and all the time as each has been successively the owner and holder of franchises
236 granted to improve the said Fox and Wisconsin rivers, and the right to utilize the same and all thereof on the land so purchased therefor as aforesaid, and which dominion, control, and claim of title and ownership have heretofore been acquiesced in and not questioned nor interfered with by the defendants or any of the persons through whom they or either of them claim title to the lands bordering on said river until about five or six years prior to the commencement of this action;" and also all and each and every part thereof contained in folios 67, 68, and 69 in the following words: "That by the appropriation under said act approved August 8, 1848, and the building and maintaining of the dam, canal, and embankment hereinbefore specified the State of Wisconsin and the Fox & Wisconsin Improvement Company and the Green Bay & Miss. Canal Company acquired the easement in and to the entire bed against lot five (5), extending to the thread of the stream against the same, and in and to the entire banks of the same for a dam landing and site for an embankment to retain the water raised by such dam, and also by such appropriation, building, maintaining, proclamation of right, purchase of lands, and utiliza-

tion of water power acquired the easement to and exclusive ownership of all of the hydraulic power created by said dam, extension thereof, and canal, with the right to the use of the same upon the lands which were so as aforesaid acquired therefor or upon such other lands acquired or to be acquired therefor as the said State and parties claiming under the State, including this defendant, might have selected or may select."

And these defendants, further answering said cross-complaint, deny each and every part contained in folio 74 in these words: "That by virtue of the right so acquired by this defendant now answering it is the owner of all of the water power created by the Government dam in question, and has the right to make ex-
237 clusive use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension to said lock opposite Island No. 3 and the middle of Island No. 4, where it was contemplated by the board of public works the same should be used."

And these defendants, further answering said first counter-claim, state that in any by section 15 of the said act of the State of Wisconsin of August 8, 1848, the said board of public works were only authorized to enter on, take possession of, and use lands, waters, and materials the appropriation of which for the use of such works of improvement should be necessary; and these defendants state that none of the water of said Fox river which would have fallen over said Government dam, after supplying said canal with what water was necessary for the purposes of navigation, to wit, about one thousand cubic feet thereof per minute, was necessary for or in any way essential to the navigation of said Fox river below said Government dam.

Said defendants deny each and every material allegation contained in the first counter-claim of the said cross-complaint or answer not hereinbefore specifically answered unto, admitted, or denied.

II.

And these defendants, for answer to the second counter-claim contained in said cross-complaint or answer, state and allege that the act of the State of Wisconsin approved August 8, 1848, organizing the board of public works and providing that "whenever a water power shall be created by reason of any dam erected or other improvement made on any of said rivers, such water power shall belong to the State, subject to future action of the legislature," and
238 the decision of the supreme court of the State of Wisconsin construing the same and mentioned in said second counter-claim apply only to such water powers as are created by the dams forming a part of the improvement and maintained at the dams themselves, and not to any water power created by the diversion of water down through such canals past the lands of other riparian owners; and these defendants deny that the supreme court of the State of Wisconsin or any other court, by its judgment in the action in said counter-claim mentioned or by any other judgment or at any

other time, ever decided that the said Green Bay & Mississippi Canal Company had lawful right or authority to divert or carry water, except for the purposes of navigation, below or downstream from the said Government dam; and these defendants, with reference thereto, state that the said supreme court of the State of Wisconsin, in its opinion and judgment in said second counter-claim mentioned upon that subject, did decide and adjudge as follows, viz:

"We do not here determine the relative rights of the plaintiff and other riparian owners below the dam with respect to the use of the water which would run over the dam if not taken from the pond into the canal, nor do we consider whether there is any restriction upon the manner or place in which the water shall be returned to the river below the dam. We only hold that the plaintiff (Green Bay & Mississippi Canal Company) owns the surplus water power created by the dam, and that the defendants have no legal right, without the consent of the plaintiff, to draw water from the pond with which to propel machinery."

III.

And these defendants, for answer to the 4th defense contained in said cross-complaint, state that this action was commenced on November 30th, 1886, and that neither the Green Bay and
239 Mississippi Canal Company or any other party ever, prior to November 30th, 1866, used or leased any water to be used upon said canal or elsewhere at Kaukauna for private or hydraulic purposes, excepting one-hundred-horse power or $\frac{1}{35}$ part of the water of said river. The water so leased was included in a lease from and executed by the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin and wife, lessors, to Cord and Gray, dated June 3rd, 1861, being the same lease mentioned in the first defense in this answer above contained; and these defendants further state that said Green Bay and Mississippi Canal Company never, prior to the commencement of this action, used or leased to be used for hydraulic purposes at Kaukauna one-half of the flow of said river.

ALFRED L. CARY,
Attorney for said Defendants Above Named Answering said Cross-complaint.

DAVID S. ORDWAY, *Of Counsel.*

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, *v.* Green Bay & Miss. Canal Co., Kaukauna Water Power Co., *et al.*, defendants. Answer of Kaukauna Water Power Co. *et al.* to cross-complaint of Green Bay & Miss. Canal Company. Cir. court, Outagamie Co. Filed Mar. 5, 1892. H. J. Mulholland, clerk, Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

240 STATE OF WISCONSIN:

In Circuit Court for the County of Outagamie.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

The above-named defendant, Henry Hewitt, Jr., answers the second and separate defense in the answer or cross-complaint of the said Green Bay & Miss. Canal Company in the above-entitled action as follows:

The original or first dam which was constructed across the Fox river at Kaukauna was completed in 1855 and was located upstream from the present dam. The north end of such original dam abutted against guard-lock 30 ft. from the north bank of the Fox river about fifty feet upstream from where the present dam is now located. The south end of said original dam abutted on the south bank of the Fox river at a point about forty feet upstream from the point of abuttal of the present dam as now located.

This defendant upon information and belief states that the Government canal at Kaukauna as originally constructed
241 was cut through the point or projection of 50 ft. from land *land* from a point a few feet upstream from the northerly end of said original dam, passing the north end thereof, and thence downstream said canal was cut through partly in river & partly in water 50 ft. from shore and lay in earth for a distance downstream below the north end of said original dam of about one hundred feet, and that said original dam, as the same was first constructed and as the same remained in use until about the year 1875, extended from bank to guard-lock north side of said river; that the retaining wall which supports the south bank of said canal from below the lower or downstream side of the present dam was no part of said original dam as the same was so originally constructed; that said dam was a complete structure by itself, as originally construct- as aforesaid, abutting upon the north guard-lock and the south bank of said river, and so remained until the building of the new or present dam by the United States in or about the year 1875.

That said canal, as originally constructed or excavated, was only

about one hundred feet in width at the top of the bank thereof, with sufficient slope of banks to support and maintain the same, was only of sufficient depth to pass through the same water craft drawing about three feet of water, and there was constructed and for a number of years after 1855 maintained in the head or mouth thereof at a point about from 50 to 75 feet upstream from the northerly abuttal of said original dam upon said north bank of said river a guard-lock, so called, which guard-lock was constructed with gates for the purpose of regulating the flow of water into the said canal; said guard-lock was about thirty feet in width on the inside thereof, and the floor or bottom sill thereof was only about four feet below the surface of the water in said canal above or upstream from the said guard-lock, and would not allow of and was not of sufficient size or capacity for the passage down the same of one-half of the flow of said river at an ordinary stage.

242 That at the time of the completion of said canal, in about the year 1855, and from thence on until the time of the commencement of this suit, the amount of water necessary to be introduced into and carried down said canal for the purposes of navigation was only about, as this defendant is informed and believes, three or four thousand cubic feet of water per minute, while the whole flow of said river, at an ordinary stage, was and now is about 150,000 cubic feet per minute.

This defendant upon information and belief states that the capacity of said Government canal, as the same was originally constructed in 1855 and as the same remained in use for at least twenty years next thereafter, was not sufficient to admit of passing into or down the same one-half of the whole flow of said Fox river at an ordinary stage of water.

This defendant, further answering said cross-complaint, states that at the time of the commencement of this action and at the time of the filing of said cross-complaint by said Green Bay & Mississippi Canal Company he, this defendant, was and still is the owner of large interests in and upon the bank of the north channel of said Fox river, both above and below the mouth of the so-called middle channel, and also of considerable interests in and upon the banks of the middle channel.

That in the north channel of said Fox river, from where the southwesterly or upstream line of private claim No. one strikes the said river on the north side down to where the northerly line of the southerly half of said private claim No. one strikes the said

243 river, there are rapids and a fall therein of about and at least, as this defendant is informed and believes, ten feet, and that the flow of said river due and belonging to the said north channel thereof below or downstream from the middle channel is and in a state of nature was at least two-thirds, $\frac{2}{3}$, of the whole flow of said river, and that the fall of and in the north channel of said river, as it passes over the land aforesaid of this defendant, before the commencement of this action was and still is susceptible of being improved on the said land of this defendant aforesaid, so as to create valuable water power for hydraulic purposes and capable

of being used upon the lands of this defendant bordering said channel, which water power was and is of great value, to wit, a sum or amount of not less than $75,000.00, as this defendant verily believes.

And this defendant further states upon information and belief that no claim was ever made by the State of Wisconsin, or by the board of public works, or by the Fox & Wisconsin Improvement Company, or by the Green Bay & Mississippi Canal Company, until the making of said counter-claim and so-called cross-complaint, that the State of Wisconsin, or said board of public works, or Fox & Wisconsin Improvement Company, or Green Bay & Mississippi Canal Company had in any way taken, condemned, or, under the provisions of said act of August 8th, 1848, subjected to their dominion or ownership any land or riparian rights or any right to the hydraulic power of said river below said Government dam.

And this defendant further states that neither the State of Wisconsin, the board of public works, or the Fox & Wisconsin Improvement Company, or Green Bay & Mississippi Canal Company ever acquired by, through, or under said act of August 8th, 1848, or otherwise, except by purchase from riparian owners, any right to or interest in the bed of Fox river, or to any of the water or to the use of any of the water of said Fox river, except for the purposes of navigation, from the present Government dam downstream to slack water below said Kaukauna rapids.

244 And this defendant further upon information and belief states that no condemnation proceedings were ever taken by the State of Wisconsin, or by said Green Bay & Mississippi Canal Company, or by said Fox & Wisconsin Improvement Company, or by said board of public works for the purpose of acquiring any right or title to any interests, either of land or water, in or upon said Fox river at Kaukauna.

And this defendant upon information and belief states that neither the State of Wisconsin, said board of public works, said Fox & Wisconsin Improvement Company, or said Green Bay & Mississippi Canal Company ever had any power or authority, either under said act of the State of Wisconsin of August 8th, 1848, or otherwise, except by purchase from riparian owners, to appropriate to their own use for private or hydraulic purposes any of the water of said river below or downstream from said Government dam.

And this defendant upon information and belief alleges that the said act of the State of Wisconsin of August 8th, 1848, in so far as it may be claimed that the same gives or transfers to the said Green Bay & Mississippi Canal Company the right to divert the water of said Fox river down the said Government canal and away from the lands aforesaid of this defendant except for the purposes of navigation, as in said counter-claim or cross-complaint alleged, or otherwise, is unconstitutional and void in that it contravenes, first, the provisions of the constitution of the State of Wisconsin; and, second, the provisions of the Constitution of the United States in that it takes or attempts to take private property for private use or for public use without any valid or legal provision being made in said

act of 1848 or elsewhere or in any other way for the payment to or obtaining payment by the owner of said water power and property so taken of the just compensation required by the constitution both of the United States and the State of Wisconsin to be paid upon the taking of private property for public use, and because said act of August 8, 1848, if held valid for the diversion or taking of any
245 water of said Fox river into and down said Government canal past the said lands of this defendant, above described, except for the purposes of navigation, deprives this defendant of his property without due process of law, contrary to the provisions of the fourteenth amendment of the Constitution of the United States.

And this defendant, further answering the said cross-complaint, denies all that part thereof at folio 17 in these words: "That at the time the State began this work of improvement no person had the right to build a dam across said Fox river."

And this defendant, further answering said cross-complaint, states that the said Fox river, from a point about one hundred feet above said original dam downstream to slack water below said Kaukauna rapids, a distance of about three-fourths of a mile, was never in a state of nature navigable; that the bed of said river for such entire distance was and is occupied by rapids and was and is composed of rock and boulders, the water passing over, among, and down the same very swiftly and most of said distance at a depth of from one to two feet only down said north channel, and particularly over the said lands of this defendant, whirling, turning, and winding from point to point between such rocks and boulders, creating whirlpools and eddies and a current so swift and strong that it was never possible for water craft of any kind to pass up and down the same with safety, and that from a time whence the memory of man runneth not to the contrary until the completion of said Government canal all com-odities or merchandise transported up or down the said Fox river were passed around the said entire rapids over the so-called portage from above said rapids down into slack water below the same, and that in fact said Fox river was not navigable in a state of nature for said entire distance occupied by said Kaukauna rapids; that the natural bed of said river had not been used for the purposes of navigation or the passing over the same of logs, rafts, or any other kind of property since the year 1846, and that no
246 water craft (except in one or two cases when a Durham boat or bateau may have been propelled by hand) has ever passed over said rapids during the period of time last aforesaid. This defendant therefore denies that said Fox river is or ever was in fact a navigable stream along down the said Kaukauna rapids.

And this defendant, further answering said cross-complaint, avers that by virtue of his ownership, as aforesaid, of interests in and upon the banks of said river he is the owner of the soil and bed of said river to the center thereof, and that he has a right to make such use of the bed of said stream and to the extent of his said ownership as he sees fit, provided only that he does not interfere with the public use of said stream for the purposes of navigation, and he avers that the construction of a dam or dams at any point upon his said lands

in said channels will not interfere in any way with any public use of said river.

And this defendant upon information and belief denies the whole of the statement in the 18th and 19th folios in said cross-complaint contained, to wit: "It was determined to build a low dam beginning on the south side near the head of the rapids and extending downstream on or near the south bank of the river, across lots 8, 7, and 6 and onto lot 5, section 22; thence, extending about a right angle with the south bank, nearly across the river, leaving an opening at the north end, through which the whole water of the river could pass, and into which opening during the period of construction a guard-lock (so called) should for safety sake be placed, and thence, further extending down the bed of the river parallel to and in part near to and in part on the north bank, to a certain point, at which should be placed a lock proper and leaving between such last-mentioned extension of dam and said north bank a channel sufficiently large to flow pass the ordinary flow of the river, and which dam, by the aid of such lock proper, should uphold and sustain the waters of said river throughout the full extent of said dam at one
247 and the same level;" and with reference thereto this defendant states that said channel was a canal and one of the canals constructed by the State for the purpose of improving the navigation of said Fox river, pursuant to the provisions of the said act of August 8, 1848; that it never was of sufficient size or dimensions to flow pass or through the same the ordinary flow of the river, and that it never was of sufficient capacity from the time of its first completion until after 1866 to pass through the same one-quarter of the flow of the river.

And this defendant states that none of the water of said Fox river, except what is necessarily taken into said canal above said Government dam for the purposes of navigation (being a flow of only about four thousand cubic feet per minute), is or ever was necessary for the purposes of navigation below said dam, but that the whole flow of said river, except such small part thereof as is so, as above stated, necessary for the purposes of navigation, should, if used by said Green Bay & Mississippi Canal Company for private or hydraulic purposes, be used by it at said Government dam, and all the water so used by it or its lessees should be returned to the bed of said river immediately at the foot of said dam, so that the same and in such manner that the same may be distributed over and passed down the various channels of said river as and in the same proportions and to the same depth as the same was wont to run in a state of nature.

And this defendant, further answering said cross-complaint, denies all that part thereof in the 27th and 28th folios thereof in these words, viz: "And that such water powers, to wit, all water powers created by said dam and canal, had been taken and appropriated by the State under said acts of legislation to the use of the State and its grantees, and were claimed to be their exclusive property, and did offer the same for sale or lease to all persons desiring to purchase or lease the same, to be used on said mill lots, and did
248 lease portions of the same, and so did with the knowledge and

according to the best of defendants' knowledge, information, and belief with the acquies-ence of said owners of said lands on either bank and of the islands of said river, and ever since then said Fox & Wisconsin Improvement Company and the grantees and assigns of said State and of said Fox & Wisconsin Improvement Company have continued to so shut off the use of such water power upon and from the south side of the river and to so lease powers on the north side and to so hold out to the world and to so declare with reference to said mill lots and water powers, and all this with the knowledge and, until about five years prior to the commencement of this action, with like acquies ence or apparent acquies-ence of all owners of lands upon the banks of said river and of the islands therein;" and this defendant with reference thereto states that prior to the year 1868 neither the State of Wisconsin, the board of public work*ds*, the Fox & Wisconsin Improvement Company, or said Green Bay & Mississippi Canal Company used or leased to be used from said Government canal for hydraulic or private purposes on the north side of said river or at any other place or point at Kaukauna to exceed one-hundred-horse power of the water of said river; that prior to 1868 but one lease of water power at Kaukauna had ever been made; that such lease was of but one-hundred-horse power, was made to parties named Cord and Gray, was dated June 3rd, 1861, was made by the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin and wife, lessors: that the entire water power created by said Government dam at the point of its location where said guard-lock was so inserted was about 2,500-horse power; that, as this defendant is informed and believes, no other water power was used or leases thereof made by the State of Wisconsin, the board of public works, the Fox & Wisconsin Improvement Company, its trustees, or the Green Bay & Mississippi Canal Company of water to be used upon the north side of the Fox river or elsewhere at Kaukauna
249 prior to the year 1882 excepting the following, viz:

1. A lease from the Green Bay & Mississippi Canal Company to John Jansen of about fifty-horse power, made in or about the year 1868, of water to be used on lot 7 of Jennie's plat and drawn from said Government canal.

2. A lease from the Green Bay & Mississippi Canal Company to Peter Reuter and A. L. Reuter, dated about the first of May, 1869, of fifty-horse power, to be used on lots 8 and 9 of said Jennie's plat.

3. A lease by the Green Bay & Mississippi Canal Company to one Burns, dated in November, 1880, of about thirty-horse power, to be used on lot 1 of said Jennie's plat for the propelling of a grist or flour mill, which lease was assigned to Augustus L. Smith on or about the 18th of September, 1882.

And this defendant further upon information and belief states that at the time of the making of all of the aforesaid leases the Fox & Wisconsin Improvement Company or the Green Bay & Mississippi Canal Company were not the owners of all of the land bordering on the north side of said Fox river from above said Government dam down to said lot one of Jennie's plat, and were also the owners

of the undivided half of all of the land bordering the north side of the north channel of said Fox river from the upstream line of said lot one of said Jennie's plat downstream to a point a few rods below or downstream from the first lock now existing in said canal; in other words, down to the northerly line of said south half of said private claim No. one and below where all of the water so leased as aforesaid was then and is now taken from said Government canal and discharged into the Fox river; that the waters so leased as aforesaid to be used from said Government canal prior to 1882 were but a small proportion of one-half of the water of said Fox river, and that neither the State of Wisconsin, its board of public works, the Fox & Wisconsin Improvement Company,
250 or the Green Bay & Mississippi Canal Company ever prior to the commencement of this action used or leased to be used on the north side of the river or elsewhere at Kaukauna the one-half of the flow of the stream of which they claimed to be the owners as riparian proprietors, and never in any visible, public, or notorious way or manner asserted or claimed any right to the use of over the one-half of the flow of said river for private or hydraulic purposes until after the commencement of this action.

And this defendant denies that said Green Bay & Mississippi Canal Company or any other party has any lawful right to divert down the said Government canal past the said lands of this defendant any of the water of said river except for the purposes of navigation, and he alleges that if the said canal company is by this court adjudged to be entitled to so divert down said canal the whole flow of the river all of the water power of this defendant upon his said lands aforesaid will be totally destroyed and all of his said lands rendered substantially worthless.

And this defendant upon information and belief, further answering said cross-complaint, states that the only water power which the said Green Bay & Mississippi Canal Company became the owner of under and by virtue of the said act of the State of Wisconsin of August 8th, 1848, was that which was created by and immediately at said original dam without the addition of any increase thereof made by the fall in the river below said dam.

And this defendant, further answering said cross-complaint, denies all of the same and each and every part thereof contained in folios 64, 65, and 66 in these words, viz: "That during all the time since the building of said dam, commenced in 1851 and completed in or about the year 1855, the State of Wisconsin, the Fox & Wisconsin Improvement Company, its trustees under said trust deed, and this defendant have notoriously, openly, and in the most public manner and to the knowledge of all riparian owners on said river
251 claimed, exercised, and proclaimed exclusive dominion and control over and title to and ownership of all the hydraulic power or water power furnished by said dam and by all other dams on said river built and maintained by them from time to time and all the time, as each has been successively the owner and holder of franchises granted to improve the said Fox and Wisconsin rivers, and the right to utilize the same and all thereof on the land so pur-

chased therefor as aforesaid, and which dominion, control, and claim of title and ownership have heretofore been acqui-sced in and not questioned nor interfered with by the defendants or any of the persons through whom they or either of them claimed title to the lots bordering on said river until about five or six years prior to the commencement of this action."

And this defendant also denies all and each and every part of said cross-complaint contained in folios 67, 68, and 69 in the following words, viz: "That by the appropriation under said act approved August 8th, 1848, and the building and maintaining of the dam, canal, and embankment hereinbefore specified the State of Wisconsin and the Fox & Wisconsin Improvement Company and the Green Bay & Mississippi Canal Company acquired the easement in and to the entire river bed against lot 5 extending to the thread of the stream against the same and in and to the entire banks of the same for a dam landing and site for an embankment to retain the water raised by such dam, and also by such appropriation, building, maintaining, proclamation of right, purchase of lands, and utilization of water power acquired the easement to and exclusive ownership of all the hydraulic power created by said dam, extension thereof, and canal, with the right to the use of the same upon the lands which were so, as aforesaid, acquired therefor or upon such other lands acquired or to be acquired therefor as the said State and parties claiming under the State, including
252 this defendant, might have selected or may select."

And this defendant, further answering said cross-complaint, denies all and each and every part thereof contained in folio 74 in these words, viz: "That by virtue of the right so acquired by this defendant now answering it is the owner of all of the water power created by the Government dam in question and has the right to make exclusive use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension to said lock opposite Island No. 3 and the middle of Island No. 4, where it was contemplated by the board of public works the same should be used."

And this defendant, further answering said first counter-claim, states that in and by section 15 of the said act of the State of Wisconsin of August 8th, 1848, the said board of public works were only authorized to enter on, take possession of, and use lands, waters, and materials the appropriation of which for the use of such works of improvement should be necessary; and this defendant states that none of the water of said Fox river which would have fallen over said Government dam after supplying said canal with what water was necessary for the purposes of navigation, to wit, about four thousand cubic feet thereof per minute, was necessary or in any way essential to the navigation of said Fox river below said Government dam; and this defendant denies each and every material allegation contained in the first counter-claim in said cross-complaint or answer not hereinbefore specially answered unto, admitted, or denied.

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II.

And this defendant, for answer to the second counter-claim contained in said cross-complaint, states and alleges that the act of the State of Wisconsin approved August 8th, 1848, organizing the board of public works and providing that "whenever a water power shall be created by reason of any dam erected or other improvement made on any of said rivers such water power shall belong to the State, subject to future action of the legislature," and the decision of the supreme court of the State of Wisconsin construing the same and mentioned in said second counter-claim applied only to such water powers as are created by the dams forming a part of the improvement and maintained at the dams themselves and not to any water power created by the diversion of water down through canals or otherwise past the lands of other riparian owners; and this defendant denies that the supreme court of the State of Wisconsin or any other court by its judgment in the action in said second counter-claim mentioned or by any other judgment or at any other time ever decided that said Green Bay & Mississippi Canal Company had lawful right or authority to divert or carry water except for the purposes of navigation below or downstream from the said Government dam; and this defendant, with reference thereto, states that the said supreme court of the State of Wisconsin, in its opinion and judgment in said second counter-claim mentioned, upon that subject did decide and adjudge as follows, viz: "We do not here determine the relative rights of the plaintiff and other riparian owners below the dam with respect to the use of the water which would run over the dam if not taken from the pond into the canal, nor do we consider whether there is any restriction upon the manner or place in which the water shall be returned to the river below the dam. We only hold that the plaintiff (Green Bay & Mississippi Canal Company) owns the surplus water power created by the dam, and that the defendants have no legal right without consent of the
254 plaintiff to draw water from the pond with which to propel machinery."

III.

And this defendant, for answer to the fourth defense contained in said cross-complaint, states that this action was commenced on November 30th, 1886, and that neither the Green Bay & Mississippi Canal Company nor any other party ever, prior to November 30th, 1866, used or leased any water to be used upon said canal or elsewhere at Kaukauna for private or hydraulic purposes excepting one-hundred-horse power. The water so leased was included in a lease from and executed by the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin and wife (Martin owned ½ this water under deed from Law & Bond to construct water power; state only owned easement on land), lessors, to Cord & Gray, dated June 3rd, 1861, being the same lease mentioned in the first defense in this answer above contained.

And this defendant further states that said Green Bay & Missis-

sipi Canal Company never, prior to the commencement of this action, used or leased to be used for hydraulic or private purposes at Kaukauna one-half of the flow of said river at its usual stage.

DAVID S. ORDWAY,
Attorney for said Defendant, Henry Hewitt, Jr.

255 STATE OF WASHINGTON, } ss:
County of Pierce, . }

Henry Hewitt, Jr., being duly sworn, says that he is one of the parties to the above-entitled action; that he has read the above and foregoing answer to the cross-complaint of the Green Bay & Mississippi Canal Company and knows its contents, and that the same is true to his own knowledge except as to those matter- therein stated upon information and belief, and as to those matters he believes it to be true. HENRY HEWITT, JR.

Subscribed and sworn to before me this 12 day of September, 1892.

S. M. KENNEDY,
[NOTARY SEAL.] *Notary Public in and for the State of Washington, Residing at Everett.*

256 Endorsement: In circuit court, Outagamie county. Patten Paper Company (Limited), Union Pulp Company, & Fox River Pulp and Paper Company, pl'ffs, *vs.* Kaukauna Water Power Company, Green Bay and Miss. Canal Co., Henry Hewitt, Jr., *et al.*, defendants. Answer of Henry Hewitt, Jr., to cross-complaint of Green Bay & Miss. Canal Co. David S. Ordway, att'y for said def't, Henry Hewitt, Jr. Cir. court, Outagamie Co. Filed Sep. 22, 1892. H. J. Mulholland, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

257 STATE OF WISCONSIN:

In Circuit Court for the County of Outagamie.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

The above-named defendant, William P. Hewitt, answers the second and separate defense in the answer or cross-complaint of the

said Green Bay & Miss. Canal Company in the above-entitled action as follows:

The original or first dam which was constructed across the Fox river at Kaukauna was completed in 1855 and was located upstream from the present dam. The north end of such original dam abutted upon the north bank of the Fox river about one hundred feet upstream from where the present dam is now located. The south end of said original dam abutted on the south bank of the Fox river at a point about forty feet upstream from the point of abuttal of the present dam as now located.

This defendant upon information and belief states that the Government canal at Kaukauna as originally constructed was
258 cut through the point or projection of solid land from a point a few feet upstream from the northerly end of said original dam, passing the north end thereof, and thence downstream said canal was cut through and lay in solid earth for a distance downstream below the north end of said original dam of about one hundred feet, and that said original dam, as the same was first constructed and as the same remained in use until about the year 1875, extended from bank to bank of said river; that the retaining wall, which supports the south bank of said canal from below the lower or downstream side of the present dam, was no part of said original dam as the same was so originally constructed; that said dam was a complete structure by itself as originally construct- as aforesaid, abutting upon the north and the south banks of said river, and so remained until the building of the new or present dam by the United States in or about the year 1875.

That said canal as originally constructed or excavated was only about one hundred feet in width at the top of the bank thereof, with sufficient slope of banks to support and maintain the same; was only of sufficient depth to pass through the same water craft drawing about three feet of water, and there was constructed and for a number of years after 1855 maintained in the head or mouth thereof at a point about from 50 to 75 feet upstream from the northerly abuttal of said original dam upon said north bank of said river a guard-lock, so called, which guard-lock was constructed with gates for the purpose of regulating the flow of water into the said canal. Said guard-lock was about thirty feet in width on the inside thereof, and the floor or bottom sill thereof was only about four feet below the surface of the water in said canal above or upstream from the said guard-lock and would not allow of and was not of sufficient size or capacity for the passage down the same of one-half of the flow of said river at an ordinary stage.

259 That at the time of the completion of said canal, in about the year 1855, and from thence on until the time of the commencement of this suit, the amount of water necessary to be introduced into and carried down said canal for the purposes of navigation was only about, as this defendant is informed and believes, three or four thousand cubic feet of water per minute, while the whole flow of said river at an ordinary stage was and now is about 150,000 cubic feet per minute.

This defendant upon information and belief states that the capacity of said Government canal, as the same was originally constructed in 1855 and as the same remained in use for at least twenty years next thereafter, was not sufficient to admit of passing into or down the same one-half of the whole flow of said Fox river at an ordinary stage of water.

This defendant, further answering said cross-complaint, states that at the time of the commencement of this action and at the time of the filing of said cross-complaint by said Green Bay & Mississippi Canal Company he, this defendant, was and still is the owner in fee-simple of the undivided one-fourth of all that part of the southerly half of private claim No. one at Kaukauna (originally patented to Paul Ducharme) lying between the said canal and Fox river. The upstream or southwesterly boundary of said southerly half of private claim No. one strikes the said Fox river at a point a few feet upstream from the red mill, formerly used as a flouring mill and owned by Augustus L. Smith, and extends along downstream upon the Fox river to a point about one hundred feet, more or less, upstream from the Outagamie Paper Company's paper mill, as now located on the north bank of the north channel of said Fox river.

That in the north channel of said Fox river, from where the southwesterly or upstream line of said private claim No. one strikes the said river down to where the northerly line of the southerly half of said private claim No. one strikes the said river, there are rapids and a fall therein of about and at least, as this defendant is informed and believes, eight feet, and that the flow of said river due and belonging to the said north channel thereof is and in a state of nature was at least one-half of the whole flow of said river, and that the fall of and in the north channel of said river, as it passes over the land aforesaid of this defendant, before the commencement of this action was and still is susceptible of being improved on the said land of this defendant aforesaid, so as to create valuable water power for hydraulic purposes, and capable of being used upon the lands of this defendant bordering said channel, which water power was and is of great value, to wit, a sum or amount of not less than $50,000.00, as this defendant verily believes.

260

And this defendant further states upon information and belief that no claim was ever made by the State of Wisconsin, or by the board of public works, or by the Fox & Wisconsin Improvement Company, or by the Green Bay & Mississippi Canal Company, until the making of said counter-claim and so-called cross-complaint, that the State of Wisconsin, or said board of public works, or Fox & Wisconsin Improvement Company, or Green Bay & Mississippi Canal Company had in any way taken, condemned, or, under the provisions of said act of August 8th, 1848, subjected to their dominion or ownership any land or riparian rights or any right to the hydraulic power of said river below said Government dam.

And this defendant further states that neither the State of Wisconsin, the board of public works, or the Fox & Wisconsin Improve-

ment Company, or Green Bay & Mississippi Canal Company ever acquired by, through, or under said act of August 8th, 1848, or otherwise, except by purchase from riparian owners, any right to or interest in the bed of Fox river, or to any of the water or to the use of any of the water of said Fox river, except for the purposes of navigation from the present Government dam downstream to slack water below said Kaukauna rapids.

261 And this defendant further upon information and belief states that no condemnation proceedings were ever taken by the State of Wisconsin, or by said Green Bay & Mississippi Canal Company, or by said Fox & Wisconsin Improvement Company, or by said board of public works for the purpose of acquiring any right or title to any interests, either of land or water, in or upon said Fox river at Kaukauna.

And this defendant upon information and belief states that neither the State of Wisconsin, said board of public works, said Fox & Wisconsin Improvement Company, or said Green Bay & Mississippi Canal Company ever had any power or authority, either under said act of the State of Wisconsin of August 8th, 1848, or otherwise, except by purchase from riparian owners, to appropriate to their own use for private or hydraulic purposes any of the water of said river below or downstream from said Government dam.

And this defendant upon information and belief alleges that the said act of the State of Wisconsin of August 8th, 1848, in so far as it may be claimed that the same gives or transfers to the said Green Bay & Mississippi Canal Company the right to divert the water of said Fox river down the said Government canal and away from the lands aforesaid of this defendant except for the purposes of navigation, as in said counter-claim or cross-complaint alleged or otherwise, is unconstitutional and void, in that it contravenes, first, the provisions of the constitution of the State of Wisconsin, and, second, the provisions of the Constitution of the United States, in that it takes or attempts to take private property for private use or for public use without any valid or legal provision being made in said act of 1848 or elsewhere or in any other way for the payment to or obtaining payment by the owner of said water power and property so taken of the just compensation required by the constitution both of the United States and the State of Wisconsin to be paid upon the taking of private property for public use, and because said act of August 8, 1848, if held valid for the diversion or tak-

262 ing of any water of said Fox river into and down said Government canal past the said lands of this defendant, above described, except for the purposes of navigation, deprives this defendant of his property without due process of law, contrary to the provision of the fourteenth amendment of the Constitution of the United States.

And this defendant, further answering the said cross-complaint, denies all that part thereof at folio 17 in these words: "That at the time the State began this work of improvement no person had the right to build a dam across said Fox river."

And this defendant, further answering said cross-complaint, states

that the said Fox river from a point about one hundred feet above said original dam downstream to slack water below said Kaukauna rapids, a distance of about three-fourths of a mile, was never, in a state of nature, navigable; that the bed of said river for such entire distance was and is occupied by rapids and was and is composed of rock and boulders, the water passing over, among, and down the same very swiftly, and most of said distance at a depth of from one to two feet only down said north channel, and particularly over the said lands of this defendant, whirling, turning, and winding from point to point between such rocks and boulders, creating whirlpools and eddies and a current so swift and strong that it was never possible for water craft of any kind to pass up and down the same with safety, and that from a time whence the memory of man runneth not to the contrary until the completion of said Government canal all commodities or merchandise transported up or down the said Fox river were passed around the said entire rapids over the so-called portage from above said rapids down into slack water below the same, and that in fact said Fox river was not navigable in a state of nature for said entire distance occupied by said Kaukauna rapids; that the natural bed of said river had not been used for the purposes of navigation or the passing over the same of logs, rafts, or any other kind of property since the year 1846, and
263 that no water craft (except in one or two cases when a Durham boat or bateau may have been propelled by hand) has ever passed over said rapids during the period of time last aforesaid. This defendant therefore denies that said Fox river is or ever was in fact a navigable stream along down the said Kaukauna rapids.

And this defendant, further answering said cross-complaint, avers that by virtue of his ownership, as aforesaid, of the north bank of the north channel of said river he is the owner of the undivided fourth of the soil and bed of said river to the center thereof, and that he has a right to make such use of the bed of said stream and to the extent of his said ownership as he sees fit, provided, only, that he does not interfere with the public use of said stream for the purposes of navigation; and he avers that the construction of a dam or dams at any point upon his said lands in said north channel will not interfere in any way with any public use of said river.

And this defendant upon information and belief denies the whole of the statement in the 18th and 19th folios in said cross-complaint contained, to wit: "It was determined to build a low dam beginning on the south side near the head of the rapids and extending downstream on or near the south bank of the river across lots 8, 7, and 6 and onto lot 5, section 22; thence extending at about a right angle with the south bank nearly across the river, leaving an opening at the north end through which the whole water of the river could pass and into which opening during the period of construction a guard-lock (so called) should for safety sake be placed, and thence further extending down the bed of the river parallel to and in part near to and in part on the north bank to a certain point at which should be placed a lock proper, and leaving between such

last-mentioned extension of dam and said north bank a channel sufficiently large to flow pass the ordinary flow of the river, and which dam, by the aid of such lock proper, should uphold and sustain the waters of said river throughout the full extent of
264 said dam at one and the same level;" and, with reference thereto, this defendant states that said channel was a canal and one of the canals constructed by the State for the purpose of improving the navigation of said Fox river pursuant to the provisions of the said act of August 8, 1848; that it never was of sufficient size or dimensions to flow pass or through the same the ordinary flow of the river, and that it never was of sufficient capacity from the time of its first completion until after 1866 to pass through the same one-quarter of the flow of said river.

And this defendant states that none of the water of said Fox river, except what is necessarily taken into said canal above said Government dam for the purposes of navigation (being a flow of only about four thousand cubic feet per minute), is or ever was necessary for the purposes of navigation below said dam, but that the whole flow of said river, except such small part thereof as is so, as above stated, necessary for the purposes of navigation, should, if used by said Green Bay & Mississippi Canal Company for private or hydraulic purposes, be used by it at said Government dam, and all the water so used by it or its lessees should be returned to the bed of said river immediately at the foot of said dam, so that the same and in such manner that the same may be distributed over and passed down the various channels of said river as and in the same proportions and to the same depth as the same was wont to run in a state of nature.

And this defendant, further answering said cross-complaint, denies all that part thereof in the 27th and 28th folios thereof in these words, viz: "And that such water powers, to wit, all water powers created by said dam and canal, had been taken and appropriated by the State under said acts of legislation to the use of the State and its grantees and were claimed to be their exclusive property, and did offer the same for sale or lease to all persons desiring to purchase or lease the same to be used on said mill lots, and
265 did lease portions of the same, and so did with the knowledge and according to the best of defendant's knowledge, information, and belief with the acquies-ence of said owners of said lands on either bank and of the islands of said river, and ever since then said Fox & Wisconsin Improvement Company and the grantees and assigns of said State and of said Fox & Wisconsin Improvement Company have continued to so shut off the use of such water power upon and from the south side of the river, and to so lease powers on the north side, and to so hold out to the world, and to so declare with reference to said mill lots and water powers, and all this with the knowledge and until about five years prior to the commencement of this action with like acquies-ence or apparent acquies--ence of all owners of lands upon the banks of said river and of the islands therein;" and this defendant, with reference thereto, states that prior to the year 1868 neither the State of Wisconsin, the board

of public works, the Fox & Wisconsin Improvement Company, or said Green Bay & Mississippi Canal Company used or leased to be used from said Government canal for hydraulic or private purposes, on the north side of said river or at any other place or point at Kaukauna, to exceed one-hundred-horse power of the water of said river; that prior to 1868 but one lease of water power at Kaukauna had ever been made; that such lease was of but one-hundred-horse power, was made to parties named Cord and Gray, was dated June 3rd, 1861, was made by the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin and wife, lessors; that the entire water power created by said Government dam at the point of its location where said guard-lock was so inserted was about 2,500-horse power; that, as this defendant is informed and believes, no other water power was used or leases thereof made by the State of Wisconsin, the board of public works, the Fox & Wisconsin Improvement Company, its trustees, or the Green Bay & Mississippi Canal Company of water to be used upon the north side of the Fox
266 river or elsewhere at Kaukauna prior to the year 1882 excepting the following, viz:

1. A lease from the Green Bay & Mississippi Canal Company to John Jansen of about one-hundred-horse power, made in or about the year 1868, of water to be used on lot 7 of Jennie's plat and drawn from said Government canal.

2. A lease from the Green Bay & Mississippi Canal Company to Peter Reuter and A. L. Reuter, dated about the first of May, 1869, of fifty-horse power to be used on lots 8 and 9 of said Jennie's plat.

3. A lease by the Green Bay & Mississippi Canal Company to one Burns, dated in November, 1880, of about thirty-horse power to be used on lot 1 of said Jennie's plat for the propelling of a grist or flour mill; which lease was assigned to Augustus L. Smith on or about the 18th of September, 1882.

And this defendant further upon information and belief states that at the time of the making of all of the aforesaid leases the Fox & Wisconsin Improvement Company or the Green Bay & Mississippi Canal Company were the owners of all of the land bordering on the north side of said Fox river from above said Government dam down to said lot one of Jennie's plat, and were also the owners of the undivided half of all of the land bordering the north side of the north channel of said Fox river from the upstream line of said lot one of said Jennie's plat downstream to a point a few rods below or downstream from the first lock now existing in said canal; in other words, down to the northerly line of said south half of said private claim No. one and below where all of the water so leased as aforesaid was then and is now taken from said Government canal and discharged into the Fox river; that the waters so leased as aforesaid to be used from said Government canal prior to 1882 were but a small proportion of one-half of the water of said Fox river, and that neither the State of Wisconsin, its board of public works, the Fox & Wisconsin Improvement Company, or the Green
267 Bay & Mississippi Canal Company ever, prior to the commencement of this action, used or leased to be used, on the

north side of the river or elsewhere at Kaukauna, the one-half of the flow of the stream of which they were so as aforesaid the owners as riparian proprietors, and never, in any visible, public, or notorious way or manner, asserted or claimed any right to the use of over the one-half of the flow of said river for private or hydraulic purposes until after the commencement of this action.

And this defendant denies that said Green Bay & Mississippi Canal Company or any other party has any lawful right to divert down the said Government canal past the said lands of this defendant any of the water of said river except for the purposes of navigation, and he alleges that if the said canal company is by this court adjudged to be entitled to so divert down said canal the whole flow of the river all of the water power of this defendant upon his said lands aforesaid will be totally destroyed and all of his said lands rendered substantially worthless.

And this defendant upon information and belief, further answering said cross-complaint, states that the only water power which the said Green Bay & Mississippi Canal Company became the owner of under and by virtue of the said act of the State of Wisconsin of August 8th, 1848, was that which was created by and immediately at said original dam without the addition of any increase thereof made by the fall in the river below said dam.

And this defendant, further answering said cross-complaint, denies all of the same and each and every part thereof contained in folios 64, 65, and 66 in these words, viz: "That during all the time since the building of said dam, commenced in 1851 and completed in or about the year 1855, the State of Wisconsin, the Fox & Wisconsin Improvement Company, its trustees under said trust deed, and this defendant have notoriously, openly, and in the most public manner and to the knowledge of all riparian owners on said
268 river claimed, exercised, and proclaimed exclusive dominion and control over and title to and ownership of all the hydraulic power or water power furnished by said dam and by all other dams on said river built and maintained by them from time to time and all the time as each has been successively the owner and holder of franchises granted to improve the said Fox and Wisconsin rivers and the right to utilize the same and all thereof on the land so purchased therefor, as aforesaid, and which dominion, control, and claim of title and ownership have heretofore been acquiesced in and not questioned nor interfered with by the defendants or any of the persons through whom they or either of them claimed title to the lots bordering on said river until about five or six years prior to the commencement of this action."

And this defendant also denies all and each and every part of said cross-complaint contained in folios 67, 68, and 69 in the following words, viz: "That by the appropriation under said act approved August 8th, 1848, and the building and maintaining of the dam, canal, and embankment hereinbefore specified the State of Wisconsin and the Fox & Wisconsin Improvement Company and the Green Bay & Mississippi Canal Company acquired the easement in and to the entire river bed against lot 5 extending to the thread of

the stream against the same and in and to the entire banks of the same for a dam landing and site for an embankment to retain the water raised by such dam, and also, by such appropriation, building, maintaining, proclamation of right, purchase of lands, and utilization of water power, acquired the easement to and exclusive ownership of all of the hydraulic power created by said dam, extension thereof, and canal, with the right to the use of the same upon the lands which were so, as aforesaid, acquired therefor, or upon such other lands acquired or to be acquired therefor as the said State and parties claiming under the State, including this
269 defendant, might have selected or may select."

And this defendant, further answering said cross-complaint, denies all and each and every part thereof contained in folio 74 in these words, viz: "That by virtue of the right so acquired by this defendant now answering it is the owner of all of the water power created by the Government dam in question and has the right to make exclusive use of the same at any point on its own lands where the same can be made available, and particularly at points or places on said dam, including its extension to said lock opposite island No. 3 and the middle of island No. 4, where it was contemplated by the board of public works the same should be used."

And this defendant, further answering said first counter-claim, states that in and by section 15 of the said act of the State of Wisconsin of August 8th, 1848, the said board of public works were only authorized to enter on, take possession of, and use lands, waters, and materials the appropriation of which for the use of such works of improvement should be necessary; and this defendant states that none of the water of said Fox river which would have fallen over said Government dam after supplying said canal with what water was necessary for the purposes of navigation, to wit, about four thousand cubic feet thereof per minute, was necessary or in any way essential to the navigation of said Fox river below said Government dam; and this defendant denies each and every material allegation contained in the first counter-claim in said cross-complaint or answer not hereinbefore specially answered unto, admitted, or denied.

270 II.

And this defendant, for answer to the second counter-claim contained in said cross-complaint, states and alleges that the act of the State of Wisconsin approved August 8th, 1848, organizing the board of public works and providing that "whenever a water power shall be created by reason of any dam erected or other improvement made on any of said rivers such water power shall belong to the State, subject to future action of the legislature," and the decision of the supreme court of the State of Wisconsin construing the same and mentioned in said second counter-claim applied only to such water powers as are created by the dams forming a part of the improvement and maintained at the dams themselves and not to any water power created by the diversion of water down through canals or otherwise past the lands of other riparian owners; and this de-

fendant denies that the supreme court of the State of Wisconsin or any other court by its judgment in the action in said second counter-claim mentioned or by any other judgment or at any other time ever decided that said Green Bay & Mississippi Canal Company had lawful right or authority to divert or carry water except for the purposes of navigation below or downstream from the said Government dam; and this defendant, with reference thereto, states that the said supreme court of the State of Wisconsin, in its opinion and judgment in said second counter-claim mentioned, upon that subject did decide and adjudge as follows, viz: "We do not here determine the relative rights of the plaintiff and other riparian owners below the dam with respect to the use of the water which would run over the dam if not taken from the pond into the canal, nor do we consider whether there is any restriction upon the manner or place in which the water shall be returned to the river below the dam. We only hold that the plaintiff (Green Bay & Mississippi Canal Company) owns the surplus water power created by the dam,
271 and that the defendants have no legal right without the consent of the plaintiff to draw water from the pond with which to propel machinery."

III.

And this defendant, for answer to the fourth defense contained in said cross-complaint, states that this action was commenced on November 30th, 1886, and that neither the Green Bay & Mississippi Canal Company nor any other party ever, prior to November 30th, 1866, used or leased any water to be used upon said canal or elsewhere at Kaukauna for private or hydraulic purposes excepting one-hundred-horse power. The water so leased was included in a lease from and executed by the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin and wife, lessors, to Cord & Gray, dated June 3rd, 1861, being the same lease mentioned in the first defense in this answer above contained.

And this defendant further states that said Green Bay & Mississippi Canal Company never, prior to the commencement of this action, used or leased to be used for hydraulic or private purposes at Kaukauna one-half of the flow of said river at its usual stage.

DAVID S. ORDWAY,
Attorney for said Defendant, William P. Hewitt.

272 STATE OF WISCONSIN, }
Winnebago County, } ss:

William P. Hewitt, being duly sworn, says that he is one of the parties to the above-entitled action; that he has read the above and foregoing answer to the cross-complaint of the Green Bay & Mississippi Canal Company and knows its contents, and that the same is true to his own knowledge except as to the matter- therein stated upon information and belief, and as to those matters he believes it to be true.

WILLIAM P. HEWITT.

Subscribed and sworn to before me this 18th day of July, A. D. 1892.

JOS. L. FIEWEGER,
Notary Public, Wis.

273 Endorsement: In circuit court, Outagamie county. Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs, against Kaukauna Water Power Company, Green Bay & Mississippi Canal Co., William P. Hewitt, *et al.*, defendants. Answer of William P. Hewitt to cross-complaint of Green Bay & Miss. Canal Company. David S. Ordway, att'y for Wm. P. Hewitt. Cir. court, Outagamie Co. Filed Jul- 23, 1892. H. J. Mulholland, clerk.

274 Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED, *et al.*
vs.
THE GREEN BAY & MISS. CANAL CO. *et al.*

Upon reading and filing the application of the Green Bay & Mississippi Canal Company for a change of venue in the action for the reason that the judge of this court had been of counsel for one of the parties to the action, and it appearing that the judge had so been of counsel, and all the parties having stipulated in open court that the case be sent to the superior court of Milwaukee county if the venue should be changed—

Upon motion of B. J. Stevens, of counsel for the canal company, it is hereby ordered that the place of trial of this action be changed to the superior court of Milwaukee county, Wisconsin.

Dated Jan'y 18, 1893.

By the court:

JOHN GOODLAND, *Judge.*

Endorsement: In circuit court, Outagamie county. Patten Paper Co., Limited, *et al.*, pl'ffs, *vs.* Kaukauna Water Power Co., Green Bay & Miss. Canal Co., *et al.*, defendants. Cir. court, Outagamie Co. Filed Jan. 18, 1893. H. J. Mulholland, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

275 *Docket Record.*

PATTEN PAPER COMPANY, LIMITED, and Union Pulp Company and Fox River Pulp and Paper Company, Plaintiffs,	Moses Hooper.
vs.	
THE KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.	Alfred L. Cary & David S. Ordway.

1886, Nov. 3. Comes the plaintiffs, by Moses Hooper, their attorney, and file their summons and complaint.

" Dec. 31. Demurrer to complaint by defendants Henry and William P. Hewitt filed.

1886, Dec. 31. Separate demurrer of Henry Hewitt filed.
1887, Jan. 3. Demurrer of Harriet S. Edwards, demurrer of Matthew J. Meade, demurrer of B. Aymar Sands, demurrer of Michael Hunt and Anna Hunt, demurrer of Kaukauna Water Power Co., M., L. S. & W. R'y Co., G. Lind, Joseph Carlson, Brokaw Pulp Co., Badger Paper Co., and Joseph Kline all served upon Moses Hooper Dec. 31, '86, & filed.
1887, Jan. 20. Plaintiffs' notice of trial & note of issue filed on cal. Feb'y term (No. 9).
" Feb'y 1. Notice of return of Barnes & Stewart and stipulation extending time to answer filed.
Demurrer argued Feb. 3, 1887, at sp'l term.
" " 4. Demurrer of Geo. F. Kelso, Geo. W. Kelso, Margaret J. and Margaret Kelso, by Barnes & Stewart, their att'ys, served Jan'y 15th, 1887, filed.
1887, M'ch 10. Order overruling demurrer of M. Hunt & Anna Hunt ent. & filed.
Order overruling demurrer of Harriet S. Edwards entered & filed.
Order overruling demurrer of Henry Hewitt, Jr., entered & filed.
Order overruling demurrer of Matthew J. Meade entered & filed.
276 Order overruling demurrer of Henry Hewitt, Jr., & W. P. Hewitt ent. & filed.
Order overruling demurrer of B. Aymar Sands entered & filed.
Order overruling demurrer of Kaukauna W. P. Co. entered & filed.
Order overruling demurrer of Geo. F. Kelso *et al.* entered & filed.
1887, Ap'l 6. Notice of appeal of Kaukauna Water Power Co. *et al.* filed.
" " " Notice of appeal of W. A. Hunt & Anna Hunt filed.
" " 8. Papers transmitted to supreme court.
1888, M'ch 14. Appeal received; remittitur on order overruling demurrer of M. A. Hunt *et al.* filed.
" " " Remittitur affirming the order overruling demurrer of all the other defendants filed.
" " " Opinion of Taylor, J., filed.
" May 26. Demurrer of Chicago & N. W. R'y Co. filed.
" " " Order overruling demurrer of C. & N. W. R'y Co. ent. & filed.
1890, Jan. 7. Is filed notice of trial & note of issue for Feb'y term.
" Feb'y 4. " " order of reference to take testimony.
" " 11. " " answer of C. & N. W. R'y Co.
" Ap'l 4. " " stipulation by & between def'ts G. B. & M. C. Co. & Kaukauna Water Power Co. to treat the counter-claims contained in the ans. of the G. B. & M. C. Co. as if contained in a formal cross-bill, &c.

1890, Ap'l 4. Is filed demurrer of d'f't Kauk. W. P. Co. to cross-complaint in ans. of G. B. & M. C. Co.
1890, Ap'l 7. Is filed notice of trial & note of issue for Ap'l term, 1890, and affidavit of service on P. R. Barnes.
" " 7. Is filed notice of argument of demurrer to counter-claims of d'f't G. B. & M. C. Co. & note of issue for Ap'l term, 1890.
" " 7. Is filed report of Referee F. S. Bradford.
" " 14. " " ans. of d'f't G. B. & M. C. Co.

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1890, Aug. 29. Motion of G. B. & M. C. Co. to file amended ans. argued.
" Sept. 13. Is filed judge's opinion admitting amended answer.
" " 29. " " order granting leave to G. B. & M. C. Co. to file amended answer.
" " 29. Is filed amended answer of G. B. & M. C. Co.
" " " " " " " " " " " " " " "
" Nov. 28. " " order for discharge of Kelsos as defendants.
" " 28. " " order vacating order of Sept. 29, 1890, and allowing amended ans. of the G. B. & M. C. Co. to be filed and served.
1890, Dec. 2. Is filed notice of appeal by K. W. P. Co. to sup. court from order allowing, &c.
" " 3. Order appealed from & papers relating thereto transmitted to supreme court.
" " 11. Is filed order staying proceedings pending appeal, &c.
1891, May 21. Is filed remittitur from sup. court; appeal dismissed, with costs against the appellants, taxed at $51.50.
" June 1. Is filed demurrer of Kauk. W. P. Co. to amended cross-complaint.
" Oct. 5. Is filed notice for argument of demurrer.
" " 15. " " note of issue on cal., Oct. term, 1891.
" " 17. " " reply of G. B. & M. C. Co., impleaded, &c.
1892, Feb. 25. Is filed original complaint & summons.
" M'ch 5. " " withdrawal demurrer of Kauk. W. P. Co. to cross-complaint.
" " 5. Is filed ans. of Kauk. W. P. Co. to ans. comp. of G. B. & M. C. Co.
" " 11. Is filed notice of trial of main suit for Ap'l term, 1892.
" " " Is filed notice of trial of issue formed by answer to cross-complaint of G. B. & M. C. Co. for April term, 1892.
" Ap'l 2. Is filed deposition of G. W. Lawe in cross-suit.
" May 21. " " & ent. affidavit & order to show cause, &c.

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1892, May 21. Is filed & ent. order requiring certain d'f'ts to ans. counter-claims in canal Co. answer.

1892, July 23. Is filed ans. of W. P. Hewitt to cross-complaint.
" Sept. 22. " " " " Henry Hewitt, Jr., to cross-complaint.
" " 28. " " supplemental order of reference.
" Oct. 4. " " referee's report, with testimony.
" " 6. " " stipulation in duplicate as to use of the pertinent testimony in Patten Pa. Co., Limited.
1893, Jan. 18. Is filed and entered order changing place of trial to the superior court of Milw. county, Wis.
" Jan. 24. Case transmitted to superior court of Milw. county, Wis., on change of venue, including copies of records & all the original papers filed in the said action.

STATE OF WISCONSIN:

Outagamie County Circuit Court.

I, H. J. Mulholland, clerk of said court, do hereby certify that I have compared the foregoing copy of all entries with the original entries on the court record in my office entered in the above-entitled action, and that the same is a correct transcript therefrom and of the whole thereof as the same remains of record in my office.

In testimony whereof I have hereunto set my hand and affixed the seal of said court this 24th day of January, 1893.

[SEAL.] H. J. MULHOLLAND, *Clerk.*

279 THE STATE OF WISCONSIN, } ss:
Outagamie County, }

Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED, *et al.*, Plaintiffs, }
against }
THE KAUKAUNA WATER POWER COMPANY *et al.*, Defendants. }

—, H. J. Mulholland, clerk of the circuit court in and for the county of Outagamie and State of Wisconsin, do hereby certify that I have compared the foregoing copies with the original entries, and that the same are true and correct transcripts of the whole and every part of all entries, orders, and minutes in the books of the clerk in the above-entitled action, and that the process, pleadings, and other papers hereunto annexed are the originals and all the papers filed in the above-entitled action, and that the same are herewith transmitted to the superior court of the county of Milwaukee, State of Wisconsin, pursuant to the annexed order for change — venue, changing the place of trial of said cause to the superior court of said Milwaukee county, Wis.

In testimony whereof I have hereunto set my hand and [SEAL.] affixed the seal of said circuit court, at Appleton, this 24th day of January, A. D. 1893.

H. J. MULHOLLAND, *Clerk.*

Endorsement: Received and filed January 25, 1893. F. C. Lorenz, clerk.

280 In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., George F. Kelso, Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, George W. Kelso, Margaret J. Kelso, and Charles S. Fairchild, Defendants.

To all whom it may concern:

The above-entitled action is brought for the purpose of determining what aliquot or fractional part of the flow of Fox river where same passes Islands No. 3 and 4 between sections twenty-one and twenty-two south of river and section twenty-four and P. Ducharme's private claim No. 1 and Alex. Grignon's private claim No. 35 north of the river, in township 21 north of range 18 east, in the city of Kaukauna, Outagamie county, Wisconsin, is appurtenant to or may be used for hydraulic power by the owners of lands bordering on the south channel thereof—that is, the channel between the south shore and Island No. 4—and what aliquot or fractional part of same is appurtenant to or may be used for hydraulic power by the owners of land bordering on the middle channel thereof—that is, the channel between Islands Nos. 3 and 4—and what aliquot or fractional part of same is appurtenant to or may be used for hydraulic power by the owners of land bordering on the north channel thereof—that is, the channel between Island No. 3 and the north shore.

And to restrain the Kaukauna Water Power Company and its grantees and lessees, owners of south shore, from taking or using more than one-sixth thereof.

[Register of Deeds' Seal.]

MOSES HOOPER,
Plaintiffs' Attorney.

Endorsement: 2726. Outagamie circuit. Patten Paper Co. (Lim.) *et al. vs.* Kaukauna Water Power Company *et al.* Notice pending. Copy. Per not. C. H. D. Out. Co., reg. office. Received & filed Nov. 4th, 1886, at 9 a. m. Julius Fuehlke, reg. Moses Hooper for pl't'ffs. Filed Oct. 23, '93. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

281 OUTAGAMIE COUNTY, } ss:
State of Wisconsin, }

I, Julius Fuehlke, register of deeds of the county of Outagamie, do hereby certify that I have carefully compared the annexed copy of notice of pendency of action and certificate of filing endorsed thereon with the original notice of pendency of action and original certificate of filing endorsed thereon, now on file and on record in my office as such register of deeds, and that the annexed copy of notice of *lis pendens* and copy of filing is a true and correct transcript of and from such original notice and certificate of filing and of the whole thereof.

Witness my hand and official seal hereto set this 4th day of November, 1886.

JULIUS FUEHLKE, [SEAL.]
Register of Deeds, Outagamie County, Wis.

282 Superior Court, Milwaukee County.

THE PATTEN PAPER COMPANY, LIMITED, *et al.*, Plaintiffs, }
vs. }
THE KAUKAUNA WATER POWER COMPANY, THE GREEN BAY AND MISSISSIPPI CANAL COMPANY, *et al.*, Defendants. }

This cause having been submitted to the court upon the pleadings and proofs and upon argument of counsel, I find the following facts:

First. The ownership of the lands bordering upon the rapids of the Fox river at Kaukauna was at the time of the filing of the complaint as alleged in the complaint.

Second. The plaintiffs were at the commencement of this action and still are the owners and lessees of mills situated on the Meade and Edwards power, on the middle channel of the Fox river at Kaukauna, substantially as alleged, and which mills could not and cannot be run without water power, and the use of which mills, with the water to which they are entitled, is of great value to the plaintiffs as alleged, but the exact value is not found, the same being immaterial because of the waiver of damages in this action.

Third. By nature there flowed in the south channel of said river at said Kaukauna rapids $\frac{43}{200}$ of the whole flow of the river, and in the middle channel $\frac{62}{200}$ thereof, and in the north channel $\frac{95}{200}$ thereof.

Fourth. That at the commencement of this action the Kaukauna Water Power Company, by its servants, agents, and lessees, diverted from the river above the head of Island No. 4, and so that the same could not pass into the middle channel of the river, whereon
283 plaintiffs' mills are situated, or north of Island No. 4, more than $\frac{43}{200}$ of the flow of the river.

Fifth. That the State of Wisconsin, under and by virtue of an act of the legislature of the State of Wisconsin approved August 8th, 1848, entered upon the improvement of the Fox and Wisconsin rivers and prosecuted such improvement up to some time in the

year 1853, when the Fox and Wisconsin Improvement Company was incorporated and the work of improvement of those rivers turned over to that company.

Sixth. That afterwards that company prosecuted the work of improvement and maintained the same as constructed by the State and by it, substantially as shown by the Plaintiffs' Exhibit "A 1," up to the time of the sale of the works of improvement to the trustees and the organization of the Green Bay and Mississippi Canal Company, when the same was turned over to that company, and that the Green Bay and Mississippi Canal Company completed said work of improvement and have since maintained the same up to the 18th of September, 1872, when said company conveyed to the United States of America, by deed bearing date on that day, "all and singular its (the said Green Bay and Mississippi Canal Company's) property and rights of property to the line of water communication between the Wisconsin river aforesaid and the mouth of the Fox river, including its locks, dams, canals, and franchises, saving and excepting therefrom and reserving to the said party of the first part the following-described property, rights, and portions of franchises which, in the opinion of the Secretary of War and of Congress, are not needed for public use, to wit: '* * *' . Second. Also (saving and reserving) all that part of the franchises of said company, namely, the water powers created by the dams and by the use of the surplus waters not required for the purpose of navigation, with the rights of protection and preservation
284 appurtenant thereto and the lots, pieces, or parcels of land necessary to the enjoyment of the same and those acquired in reference to the same."

Seventh. That the Fox and Wisconsin Improvement Company so long as it had the control of said work of improvement leased so much of the water power created by said dam, to be drawn from the arm of the dam or canal, as it was able to lease for the best rents thereof it could obtain; that it became and was the absolute owner by grant from the State.

Eighth. That since, down to the trial of this action, the Green Bay and Mississippi Canal Company has leased all of the water power from the pond created by said dam and said canal or arm of the dam, to be used over the water-power lots abutting on said canal and shown on the Plaintiffs' Exhibit "A 1," which it could find customers for, at the best rent it could obtain, and at the date of the trial it was leasing, to be used from said canal, more than 2,500-horse power of water on the north side and was permitting the defendant The Kaukauna Water Power Company to use more than 2,600-horse power on the south side, and that the water power thus controlled and leased by it passed to it by purchase on foreclosure of mortgage, a trust deed given by the improvement company.

Ninth. That the remainder of the flow of said river was permitted to spill over the dam and to pass down the river.

Tenth. That the river below the dam is divided by islands into

three channels, called respectively the south, middle, and north channels of the river.

That $\frac{43}{100}$ of the whole flow of the river below the dam passed in a state of nature through the south channel, and $\frac{62}{100}$ of the whole flow passed through the middle channel, and $\frac{95}{100}$ of the whole flow of the river passed through the north channel.

285 And as conclusions of law I find that under the deed of September 18th, 1872, the United States are bound to maintain the dam and canal so as to furnish to the Green Bay and Mississippi Canal Company all the surplus water from said pond not required for navigation at such points on said canal as said canal company should desire to use the same.

Second. That the maintaining of such dam and canal by the United States and supplying the water flowing therein to the canal company is in execution of such agreement, and that the canal company is entitled to use or lease to others all of the surplus water from said pond not necessary for navigation, to be drawn through said canal or directly from said pond, to be used for water power at such point or place on the canal or elsewhere as it shall see fit.

Third. That the plaintiffs are entitled to judgment that of the water permitted by the United States and the Green Bay and Mississippi Canal Company to flow in said river below the dam and above the head of Island No. 4 $\frac{43}{100}$ thereof should of right flow down the south channel, and $\frac{57}{100}$ thereof down the main channel, north of Island No. 4, and that of the water so permitted to flow down the main channel, north of Island No. 4 and above the middle channel, $\frac{62}{157}$ thereof should of right flow down the middle channel and south of Island No. 3, and $\frac{95}{157}$ thereof down the north channel or north of Island No. 3.

Fourth. That the Green Bay and Mississippi Canal Company is entitled to have and recover judgment against all the other parties in the action; that it is entitled to all the surplus water not necessary for navigation; that it is not obliged to permit any of the water of the river and the pond to flow over the dam, but may withdraw the same through the canal, extending from the pond to the slack water below the rapids, and draw and use the same from said

286 canal wherever it may be available for water power, which judgment shall not conclude or prejudice the Green Bay and Mississippi Canal Company from recovering against the Kaukauna Water Power Company for the use of the water it may heretofore have drawn or shall hereafter draw from said pond.

Fifth. That the Kaukauna Water Power Company has no right to use and should be enjoined from using any water from the power which escapes over the dam that was erected and is maintained by the Government so as to lessen or impair the proportionate flow, as hereinbefore determined, in said middle & north channels of all water which so escapes.

Sixth. The water power created by the Government dam and as incidental thereto is the power produced by the surplus water not used for navigation flowing into the canal from the pond made by the dam intercepting the water of the river, of which water power

and the surplus water created by the improvement the Green Bay & Mississippi Canal Company is the absolute owner.

Seventh. That plaintiff is not entitled to a judgment as demanded in the amended prayer of the complaint declaring and adjudging any portion of the entire natural flow of the waters of Fox river to be appurtenant to or as of right belonging to the north, south, or middle channel of said river below the dam, excepting such water as is permitted to escape over the dam, subject to the right of the Green Bay & Mississippi Canal Co. to use all the water power and all the surplus water of the river not required for navigation flowing from the pond created by the Government dam into the canal, and the plaintiff ought not to have judgment against the Green Bay & Mississippi Canal Co. which will abridge its right to the use of the water power and surplus water as it may deem necessary.

Eighth. The defendant The Green Bay & Mississippi Canal
287 Co. ought to have judgment for costs upon its answer, and the plaintiff is entitled to judgment for costs against such of the defendants as are affected by the relief which by this decision it is considered entitled to.

Let judgment be entered in accordance herewith.

R. N. AUSTIN,
Superior Judge.

Endorsement: 2726. Patten Paper Co. *et al. vs.* Kaukauna Water Power Co. *et al.* Findings. Filed Dec. 9, '93. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

288 Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and The Reese Pulp Company, Defendants.

Upon reading and filing the findings of facts and conclusions of law of the Honorable R. N. Austin, judge of said court, and his order for judgment herein, and upon motion of B. J. Stevens and E. Mariner, attorneys for the defendant The Green Bay and Mississippi Canal Company—

It is hereby considered, adjudged, and decreed that the defendant

The Green Bay and Mississippi Canal Company is the owner of and entitled, as against all of the parties to this action and their successors, heirs and assigns, to the full flow of the river not necessary for navigation from the said upper or Government dam across the Fox river at Kaukauna, and is not obliged to permit any of the water of the river or pond to flow over the dam, but is entitled to withdraw from the pond made by said dam all of the surplus waters not necessary for navigation, either through the canal extending from the pond to slack water below the rapids or directly from the pond, and use the same from said canal or said pond and let such water to others to be used wherever it may be available for water power, and is not obliged to permit any of the water from the river or pond to flow over said dam.

And, second. It is further considered and adjudged that all and singular the other parties to this action are hereby forever enjoined from interfering with the said Green Bay and Mississippi Canal Company in so withdrawing and using such water.

Third. It is further considered, adjudged, and decreed, as in favor of the Patten Paper Company, against all the other defendants, that all of the water of the river which is permitted by the Green Bay and Mississippi Canal Company to flow over the upper dam or into the river above Island No. Four, so as to pass down the river, should be, and it is hereby, divided and apportioned between the plaintiffs and their successors and assigns, the Kaukauna Water Power Company and its successors and assigns, and the Green Bay and Mississippi Canal Company and its successors and assigns, between and to the south, middle, and north channels of the
289 river in the following proportions—that is to say: $\frac{43}{200}$ part of the water so permitted to flow down the river of right should flow down the south channel; $\frac{157}{200}$ of the whole flow of the river so permitted to flow over the dam should of right flow down the main channel of the river, north of Island No. 4, and that of the water so permitted to flow down the main channel of the river, north of Island No. 4 and above the middle channel, $\frac{62}{157}$ thereof should of right flow down the middle channel and south of Island No. 3, and that of the water flowing down the north channel, north of Island No. 4 and above Island No. 3, $\frac{95}{157}$ part should of right flow down the north channel and north of Island No. 3; and each of the other parties to this action, their heirs, successors, and assigns, are forever enjoined from interfering with the waters of said river so permitted to flow over the dam or into the river above Island No. Four so as to prevent their flowing into said channels in the proportions aforesaid.

Fourth. Nothing in this judgment contained shall in anywise conclude the Green Bay and Mississippi Canal Company from recovering against the Kaukauna Water Power Company compensation for water which it has heretofore drawn or shall hereafter withdraw from the pond created by said upper dam with the assent of the Green Bay and Mississippi Canal Company.

Fifth. That the Green Bay and Mississippi Canal Company do have and recover of and from The Patten Paper Company (Limited), The Union Pulp Company, and The Fox River Pulp and Paper Com-

pany, plaintiffs, and The Kaukauna Water Power Company, Henry Hewitt, Jr., and Wm. P. Hewitt, defendants, the sum of two hundred and fifty-eight and $\frac{90}{100}$ dollars as and for its costs and disbursements upon the issue made by its answer and its cross-complaint herein.

Sixth. That the plaintiffs, The Patten Paper Company (Limited), The Union Pulp Company, and The Fox River Pulp & Paper Company, *defendant*, have and recover of and from the defendants The Kaukauna Water Power Company the sum of two hundred forty-nine and $\frac{44}{100}$ dollars as and for *its* costs and disbursements upon the issue made by the complaint for the partition and division of the waters of the Fox river.

Dated January 19, 1894.

By the court:

R. N. AUSTIN, *Judge.*

Endorsement: Superior court, Milwaukee county. Patten Paper Company (Limited) *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company *et al.*, defendants. Judgment. Filed Jan. 19, 1894. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

290 In Superior Court, Milwaukee County, State of Wisconsin.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. Edwards, The Green Bay & Mississippi Canal Company, and Others, Defendants,

and

THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,

vs.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, FOX River Pulp & Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

Bill of Exceptions.

The issues in this cause having come on to be tried in the said superior court before his honor Robert N. Austin, one of the judges thereof, without a jury, on the ninth day of December, 1893, and the respective parties having appeared by their attorneys, they produced the following testimony and proofs, to wit:

291 Circuit Court, Outagamie County.

THE PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Reese Pulp Company, August L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Henry D. Smith, Herman Erb, Asel W. Patten, and Charles S. Fairchild, Defendants.

Witnesses for K. W. P. Co.:

N. M. Edwards, pp. 1 to 36.
B. H. Beaulieu, 36 to 46.
John Stovekin, 46 to 50.
John P. Diedrich, 50 to 55.
H. A. Frambach, 50 to 62–63.
Alex'd'r Grignon, 63 to 66.

Plaintiffs' testimony, p. 67.
Peter Reuter, pp. 67 to 85.
N. M. Edwards, 85 to 108.
T. W. Orbison, 108 to 110.
A. P. Rice, 110 to 119.
P. V. Smith, 119 to 128.
Michael Mullony, 128 to 138.
O. G. Lord (M. D.), 138 to 144.
Peter Rademacher, 144 to 146.
A. C. Black, 146 to 150.
John Dashner, 150 to 155.
Louis Forney, 155 to 158.

Pursuant to the order of reference in the above entitled cause and notice of taking testimony herein served by The Kaukauna Water Power Company and other defendants, who appear by Alfred L. Cary, their attorney, and David S. Ordway, their counsel, upon plaintiffs' attorney and Chicago & Northwestern Railway Company and The Reese Pulp Company, the only other defendants who have appeared and answered in this cause, the undersigned referee attended at the office of Mr. D. J. Brothers, in Kaukauna, on Wednesday, the 19th day of February, 1890, at one o'clock p. m., when and where appeared before me the said Alfred L. Cary and David S. Ordway on behalf of the defendants so represented by them; also Moses Hooper, attorney for said plaintiffs and on their behalf, and also on behalf of the Green Bay & Miss. Canal Co. so far as relates to the apportionment of the flow of water between the several streams,

but without prejudice to any claim such said canal Co. may make to the whole flow of the water; also appeared there Winkler, Flanders, Smith, Bottom & Vilas, attorneys for — A. W. Hard, counsel for, The Chicago & Northwestern Railway Company, one of said defendants, and thereupon the following testimony was taken; and after the testimony of the defendants was taken an adjournment was had until the 10th day of March, 1890, at which time appeared the counsel as above noted and also Mr. Breese J. Stevens, att'y for the G. B. & M. Canal Co., and the testimony of the plaintiffs was taken as herein set out.

(Signed) F. S. BRADFORD, *Referee.*

Dated April 3rd, 1890.

292 N. M. EDWARDS, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. What is your name?

A. Nathaniel M. Edwards. I live at Appleton and have lived in Outagamie county since 1866. I am a civil engineer and surveyor.

Q. How long have you been acquainted with the Fox river at Kaukauna?

A. Have been acquainted with it for 23 years or more; I first became acquainted with it in 1866.

Q. What was your business in 1866?

A. I was engineer and superintendent for the Green Bay & Miss. Canal Company in charge of the Government improvement.

Q. Was you acquainted with the Government dam at Kaukauna at that time?

A. I was.

Q. Is that the same dam that is now in sight and called the Government dam at Kaukauna?

A. No.

Q. What year was the present dam built?

A. I should say about 1875, '76, or '77.

Q. Was that built while you were in charge of the Green Bay & Miss. Can. Co. works?

A. It was not.

Q. Where did the dam stand in '66 and up to the time the new dam was built at Kaukauna, with reference to the present dam?

A. It was a short distance above the present dam. I don't recollect the distance, but the south end, perhaps, I should say, 40 or 50 feet and the north end 75 feet above the present dam.

Q. Was you acquainted with the flow of the river during the years following '66 while you was acting in the capacity mentioned for the canal company?

A. I was, considerably so.

Q. Do you recollect any years during that period when there was a great fluctuation, either very great high water or low water, while you was so acting for the canal company?

A. I don't recollect any special year.

Q. Did it vary very much during the period while you was acting for the canal company as to its flow?

A. It did every spring freshet and in the summer and fall low water.

Q. How long was you in that capacity for the canal company?

A. About five years; that would be from '66 to about '71.

Q. Do you know where the head of Island 4 is at Kaukauna?

A. Yes, sir.

Q. What channel, so called, of the river passes down southerly of Island 4?

A. What is called the south channel.

Q. How far upstream is it from the upstream end of Island 4 to the southerly end of the present Government dam?

A. 695 feet in a straight line.

Q. How far upstream is it from the upstream end of Island Number 4 to the northerly end of the present Government dam;
293 or, in other words, how much is the northerly end of the present Government upstream from the upstream end of Island Number 4 in a direct line?

A. From the upper end of the island, by the thread of the stream, to a point squarely opposite the north end of the dam is 445 feet.

Q. How far is it from the upper end of Island Number 4 to the present Government dam at its center running north and south?

A. About 542 feet.

Q. Producing a line across the river at right angles with the thread of the stream from the northerly end of the present Government dam, what is the distance to such line from the upper end of Island Number 4 following the course of the stream?

A. 445 feet.

Q. Did you do some measuring and make some maps for the Kaukauna Water Power Company of this stream at this locality during the year 1888?

A. Yes, sir.

Q. Is the map upon tracing cloth which I now have opened before you a map made by you at that time?

A. It is or made in our office under my supervision.

Q. I call your attention to that map and ask what point upon it you designated as the head or upstream end of Island Number 4.

A. A red circle a little above the tree marked "Black ash."

The map referred to and now shown witness is offered in evidence in connection with his testimony and is marked by the referee "Exhibit I."

Q. Were you present and did you assist in making the surveys represented by the map now shown you?

A. I was present during most of the survey that was made on this map. I could not say I was entirely. What I did not make Mr. Orbison, my partner, was present, and he is here.

Plaintiff objects to the introduction of the map on the ground

that the witness has not been questioned as to its correctness; and, further, it does not appear to represent the survey he made or any part of it marked "Exhibit I."

Q. Have you been at the locality in question, near the head of Island Number 4, today taking measurements and doing some work as an engineer in this case?

A. I have.

Q. Will you look at the map "Exhibit I" and state whether it is a correct representation of that locality and of the premises represented upon it, substantially a correct representation—for we are not intending to go close to any small number of feet or inches in this examination—and as far downstream as below the lower downstream line of red figures which appear across the north channel?

294 A. It is. There is only one modification—that is, this temporary dam is a little irregular. We drew a straight line; we did not make a survey of that; it is of little importance; otherwise it is quite correct.

Q. The temporary dam is a little irregular or crooked; it is marked on this map as straight; it is not quite straight.

A. Yes, sir.

Q. What is the temporary dam—a dam across?

A. It shuts out the main river from the south channel across the head of the south channel; it runs from the head of Island Number 4 to a little south of the Government dam.

Q. Was you hereabouts and did you know at any time that that dam was put in—when it was put in there?

A. I saw it soon after it was put in, and prior to this there was another still more temporary dam, which lasted some years.

Q. What is the whole distance across the Fox river from the south bank of the south channel to the face of the present retaining wall of the canal on the north side of the river at the red circle, mentioned by you as the head of Island Number 4, at right angles with the stream?

A. 685 feet to the medium water line, as marked on this map, "Exhibit I."

Q. What is the whole distance from the same retaining wall across at the same place to what is marked high-water line of the south bank of the south channel?

A. About 725 feet.

Q. What is the whole distance across the Fox river at right angles with the stream, measured at the letter "O" in the word "Original," on the south bank of the river across to the face of the retaining wall of the canal on the north side of the river?

A. 620 feet, measuring from the line near the letter "O" of "Original medium water line," square with the direction of the stream to the retaining wall of the canal on the north side.

Q. What is the entire distance across the river at right angles with the stream, at the same locality mentioned in the last question, from the south face of the retaining wall of the Government canal

to the line marked on map "Exhibit I" as high-water line on the south bank?

A. 650 feet.

Q. What is the distance from the red circle mentioned by you as the head of Island Number 4 across at right angles with the thread of the south channel to the line marked upon map "Exhibit I" as "Original medium water line"?

A. 320 feet, scaling it on the map; but the fact is, the slope of the shore is very gradual, and 3 or 4 inches of water in the height of the river would possible make 10 feet difference in the width of the channel.

Q. You measured it today?

295 A. Today I measured it with the ice-mark of the shore and found 311 feet.

Q. What is the stage of water today that you referred to as the ice-mark on the bank?

A. About a fair low-water mark.

Q. What is the distance from the red circle called upon the map "Exhibit I" head of Island Number 4 across at right angles with the thread of the south channel to the line marked high-water line, on the south bank of the south channel?

A. 355 feet.

Q. What is the distance from the same red circle called Island Number 4 across at right angles with the thread of the north channel to the southerly face of the present retaining wall of the Government canal on the north side of the north channel?

A. 375 feet—that is, by the scale.

Q. What is the length of the present Government dam?

A. 599 feet for overflow.

Q. What is the distance from the northerly end of the present Government dam, as shown by the map "Exhibit I," to the southerly end of the same dam on the southerly bank of the river?

A. The same distance as in the last answer.

Q. At what angle is the present Government dam constructed as to the course of the river at that point?

A. Between 70 and 71 degrees.

Q. What do you mean by that?

A. That would be the angle included with the dam and looking north, and thread of the stream looking downstream.

Q. Suppose a line drawn across the river at right angles from the northerly end of the present Government dam to the south bank of the river, how far upstream, above where such line would strike the south bank of the river, is the present southerly end of the present Government dam?

A. Just about 200 feet.

Q. What is the bed of the river composed of from the north side to the south side, immediately below the present Government dam, and on downstream as far as the head of Island Number 4, at the red circle shown on map "Exhibit I"?

A. Most of the bed is broken rock and gravel. There are bare places of rock in certain parts.

Q. How deep into the bed do you know of any such portions of gravel extending below what you call the surface of the rock?

A. I know of no holes below the surface of bed rock that I would call bed rock.

Q. Do you know of any part of the bed of the stream above the head of Island Number 4 which is solid rock? I don't mean
296 extending clear to the surface clear up to the water, but if you know of any portion of which the bed is solid rock clear across.

A. I don't know where the solid rock extends clear across.

Q. Do you know, as a matter of fact, whether the whole bed of the river is underlined with lime rock?

A. It is.

Q. At about what distance do you strike it across the river above the head of Island Number 4?

A. My judgment is from where we found it in places that it is from nothing to perhaps 2 and one-half feet below the gravel bed.

Q. With the depth of water running over the surface of the bed in ordinary stages of water of about how much?

A. From nothing to perhaps 3½ to 4 feet, possibly.

Q. Did you ever see the Fox river at the locality in question, above the head of Island Number 4, when there was no dam in?

A. I did not.

Q. What is the character of the bed of the river from the northerly end of the Government dam—present Government dam—down to and as far as the present city bridge near the red mill called A. L. Smith's mill? What is it composed of? I refer now to the northerly half of the said channel.

A. I have only observed, possibly, for 20 or 30 feet out from the retaining wall of the Government canal, and I think I found in 2 or 3 places solid rock bottom, but most of the way it is broken stone and gravel, and where I found what was solid rock I could not positively say but what it is a large floating stone; so without an examination with the water taken out it would be difficult to tell.

Q. What is it composed of on the southerly half of the north channel from the head of Island Number 4 down to the same city bridge?

A. It is partly smooth rock and partly gravel. On top of the rock there is more bed rock and showing a great deal on the island side.

Q. What is the length of the Government retaining wall of the canal from the northerly end of the present Government dam down to the A. L. Smith grist mill?

A. Very near 1,190 feet.

Q. Did you at the request of the Kaukauna Water Power Company, in February, 1888, make an examination of this wall and measurements and answer certain questions which were sent to you by Mr. Vilas in reference thereto?

A. I did.

Q. Do you recognize the answers? I show you what purports to be the same.

A. I do.

Q. I show you a paper containing questions and answers
297 which purports to be such request and I ask you if you recognize it as the one which you then made.

A. I do.

Q. Is it signed by you?

A. It is.

Q. Did you make those measurements at the time yourself?

A. I think I made a good share; I was helping most of the time.

Q. Who helped you?

A. Mr. Orbison and another assistant; Orbison was sometimes at the instrument and I was sometimes.

Q. How high is it above the bed rock of the rock at the dam?

A. Nearly 11 feet.

Q. How high is it about halfway down from the dam to the A. L. Smith grist mill?

A. We made it about 13½ feet, as near as we could find the bed rock; we thought we obtained the bed rock.

Q. How high is it at its highest place above bed rock of the river?

A. About 16⅔ feet.

Q. Where is the highest place?

A. It is on the bend, I think, a little way above the grist mill of A. L. Smith.

Q. How high is it over against the A. L. Smith grist mill?

A. I don't know as we could get out there; it is filled in near the wall and we did not measure it out into the river.

Q. How far does that wall extend, if at all, below the A. L. Smith grist mill?

A. Not any; it runs out back of the mill.

Q. How wide is that wall on top? How thick is it on top?

A. My judgment is that it is about four feet on top, thick, the width of the top, and I should say they would not be likely to build the base, much less than the height, the way it *is* stood. I don't know the thickness otherwise than estimating by judgment.

Q. Do you know the depth of the water in the canal just above the swing-bridge at Kaukauna?

A. We have measured the depth at times and I think it is from 6 to 9 feet generally.

Q. Do you know whether there has been any dredging done around that locality by the Government?

A. There has.

Q. Was there dredging during the time you was in charge of it?

A. Yes, sir.

Q. Did you ever know of rock being struck in the canal in dredging?

A. I don't know.

Q. Do you know how far inland from the water's edge that canal was constructed around the bend, if at all inland?

A. I don't know.

Q. Do you know how far out into the stream the retaining wall was constructed and now stands just above and where it would very nearly touch the Smith mill?

A. I don't know how the original ground was of my own knowledge.

Q. How many cords of stone do you estimate there are in that wall?

A. Somewhere about fourteen or fifteen hundred cords.

298 Q. Do you know where the stone came from that that wall was constructed of, of your own knowledge?

A. I don't know.

Q. How much was the north half of the channel deepened all the way down by the taking out of that amount of stone, if it was taken from the north side of the north channel?

A. It would call for a width of 50 feet; about one foot in depth, or 50 feet across area, roughly; 50 square feet across area, roughly, near the dam.

Q. At about half way down the length of the wall from the dam to the red mill how much would it deepen the bed of the north channel next to the retaining wall and over south as far as the center of the channel?

A. Probably 75 feet cross-section.

Q. Explain what you mean by 75 feet.

A. 75 feet wide and one foot deep.

Q. From the wall extending towards the middle of the stream?

A. Yes, sir.

Q. The same question I repeat. At the downstream end of the wall near the red mill?

A. At the very highest, strongest part of the wall perhaps 150 feet wide and one foot deep.

Q. You mean by that a strip 150 feet wide extending from the retaining wall out towards the thread of the stream?

A. Yes, sir; it may be I have overestimated. It would be somewhere from 120 to 125 feet instead of 150 and one foot deep.

By Mr. HOOPER:

Q. Would the rock lay more compactly in the bed of the river than in the wall?

A. Yes, sir.

By Mr. ORDWAY:

Q. How many feet and inches fall in the north channel from the downstream side of the mouth of the south channel to the discharge of water from the wheels of A. L. Smith's mill, lot one, Jennie's plat?

A. We leveled it and found five feet six and one-eighth inches when Smith's mill was not running. When the mill was running I should judge it would have been about five feet.

Q. What is the fall in the south channel from its mouth down to the foot of the canal, called the Kaukauna Water Power Company's canal?

A. Four feet and ten inches.

Q. What is the fall in the north channel from a point about opposite the head of Island Number 4 down to the discharge of the wheels of Smith's red mill?

A. Five feet 6¼ inches when the mill is not running and 299 - five feet when running.

Q. What is the fall from the mouth of the south channel down to slack water below or near Island Number 1?

A. Virtually 40 feet. That is quite a distance below the meander of Island Number One.

Q. How much is the fall from the foot of the Government dam down the south channel to slack water at or below Island Number One?

A. About 43 feet.

THURSDAY MORNING, *February* 20, 1890.

Present: Mr. Hooper, for the plaintiffs, and Messrs. Ordway and Cary, as of yesterday.

N. M. EDWARDS' examination continued by Mr. Ordway:

Q. What do the blue letters and figures upon the map Exhibit 1 represent or indicate?

A. They indicate the surface of the water as it was the day we made the survey, and the references for level is for the same bench-mark as the other figures—top of foundation of the brick store on the east side of Island street and south side of Oak street the northwest corner foundation of store.

Q. Was that the bench-mark from which this survey was made?

A. Yes, sir.

Q. Are there any figures on the map "Exhibit 1" which show the fall in the stream from the Government dam downstream?

A. There are.

Q. What are those figures?

A. In blue on the map, from the south end of the dam to the head of the island and along the north side of Island Number 4 down and west.

Q. What is the fall as so shown on Exhibit 1 from the southerly end of the Government dam to the point as indicated in blue figures downstream from the south end of Government dam?

A. $\frac{31}{100}$ of a foot. That point is marked on the map as minus 1.42. Second place, marked minus 2 and $\frac{19}{100}$, has a fall from the level of the water at the foot of the dam of one foot and $\frac{8}{100}$. The third place, marked minus 2 and $\frac{48}{100}$, has a fall from the foot of the dam of one and $\frac{37}{100}$. The fourth place, marked minus 2 and $\frac{52}{100}$, has a fall of one foot and $\frac{41}{100}$. The fifth place, marked minus 3 and $\frac{9}{100}$, has a fall from the foot of the dam of one foot and $\frac{98}{100}$. The sixth place, marked minus 3 and $\frac{49}{100}$, has a fall from the foot of the dam of two feet and $\frac{38}{100}$.

Q. At the circle?

A. Near the circle in red; near at the head of Island 4, marked

minus 4 and $\frac{47}{100}$, has a fall from the foot of the dam of 3 and
300 $\frac{36}{100}$. The 8th place, marked minus 4 and $\frac{81}{100}$, has a fall from the foot of the dam of 3 and $\frac{70}{100}$. Ninth place, marked minus 5 and $\frac{23}{100}$, has a fall from the foot of the dam — 4 and $\frac{12}{100}$. Tenth place, marked minus 5 and $\frac{61}{100}$, has a fall from the foot of the dam of 4 and $\frac{50}{100}$. The 11th place, marked minus 5 and $\frac{92}{100}$, has a fall from the foot of the dam of 4 and $\frac{81}{100}$.

Q. You stated yesterday that the fall from the south channel down to the discharge of water from the wheels of the Smith mill, on lot one, Jennie plat, when the wheels of the mill were not running was 5 feet and 6 and $\frac{1}{8}$ inches, and had the mill been running you would judge it to have been 5 feet. How many feet is it from the downstream side of the mouth of the south channel—I mean from a line drawn at right angles across to the retaining wall of the Government canal wall, at right angles with the stream across the retaining wall of the canal down to the wheels of the Smith mill—about?

A. 870 feet.

Q. How far from the same point down to the wheels of the Framback paper mill?

A. 1,130 feet.

Q. How far from the same point down to the wheels of the American pulp mill?

A. 1,330 feet.

Q. How many feet and inches fall in the north channel from the same point—head of Island Number 4—to the wheels or to the discharge of the water from the wheels of the Framback paper mill?

A. 5 feet 7 and $\frac{3}{4}$ inches.

Q. This surveying and leveling was done about the first of December, 1888?

A. Yes, sir; it was made about the first part of December, 1888. The water was very low in the main stream of the river at that time.

Q. What is the stage of the water in the river now?

A. It is quite low in the channel.

Q. What is the stage of the water in Fox river now here at Kaukauna?

A. It is a low stage.

Q. Did you ever see it as low before?

A. Yes, sir; lower, I think.

Q. When?

A. At times last season, and at that time it was about as low as it is now.

Q. Is it not true that the water is below the crest of the Government dam at Neenah, and is it not lower at Neenah in Lake Winnebago than at any time you have ever heretofore known it?

A. No, sir; not at present. It is higher now than it was last fall.

Q. Is the water running over the Neenah dam?

A. I think not. I cannot say.

Q. Is there any water running here except what they let through the wheels at Neenah and Menasha?

A. I judge but very little.

Q. You can tell by the flow of water past Kaukauna what
301 the stage of water is in the Fox river above Kaukauna?

A. Not always.

Q. Can you tell unless you know how much water is passing through the wheels at Neenah and Menasha?

A. No; we cannot by personal knowledge.

Q. If they shut the wheels at Neenah and Menasha, entirely close them, will there be any water after 48 hours' running down the Fox river past Kaukauna?

A. Not a great deal; of course, there will be a leakage.

Q. Was there ever a time within your memory when the water of the Fox at Neenah and Menasha was lower and of less volume than at the present time?

A. Yes, sir.

Q. What year?

A. It was during the fall and winter of 1889; this last fall and winter, and I think the year before, there were times when the water was lower than it is now.

Q. How much does the water in Lake Winnebago vary at the Menasha and Neenah dam in height ordinarily, in the matter of a week's time, the wheels at Neenah and Menasha all being closed and the flow entirely stopped?

A. As long as that never happens I can hardly answer that.

Q. How much have you ever known at any time the water to raise in 24 hours at the Neenah and Menasha dams?

A. I should say between one and two inches, possibly as much as two inches from the inflow of freshet, without effect by the winds; I should say as much as that, possibly.

Q. Would that be in time of highest water?

A. Yes, sir; highest flood.

Q. For how long a time have you known it to remain substantially stationary, without variation?

A. A month or two.

Q. If they run the mills a week at Menasha and Neenah both at such a time would it vary the height of the water on the dam perceptibly?

A. I should rather make a calculation on that. I think it would perceptibly.

Q. I mean at such a time when there is no water running over the dam, when it stands at the crest of the dam.

A. If there was no inflow or evaporation, I should say the mills would use ordinarily about one-half inch of the level of the lake in 24 hours.

Q. What is the head raised by the Government dam at Kaukauna?

A. About 8 feet.

Q. You mean by that that the surface of the water above the dam is about 8 feet above the surface of the water below the dam?

A. At a low stage, when the water is about level with the top of the dam.

Q. Do you know why the angle of the Government dam was changed when it was rebuilt by the Government after you
302 left the employ of the canal company?

A. No; I don't know the reason.

Q. What effect, if any, on the flow of the stream does the change of that angle occasion?

A. Comparatively little between the old and new dam.

Q. Would it have a tendency to send more water towards the mouth of the canal on the north shore as changed and as it now stands?

A. I should say not. I should say rather the reverse, if any, but not much difference. I mean by the canal the United States canal.

Q. Have you ever been at Kaukauna and seen the water of the Fox river at a very high stage?

A. Yes, sir.

Q. Have you ever noticed the water as it passed downstream after falling over the Government dam at Kaukauna in its flow past the retaining wall on down to the red mill of A. L. Smith?

A. Yes, sir.

Q. How high up above where the surface of the water now is have you seen it reach up on that wall above where it now is?

A. I should make a guess of four feet strong.

Q. Have you ever seen the water at such a stage that after passing the Government dam it flowed over Island Number 4?

A. Yes, sir; parts of it near the head.

Q. What was the character of the rush of the water during such period of high flood as it passed down the north channel?

A. Very swift, strong stream.

Q. At what part of the north channel was it swiftest?

A. I should judge about the center.

Q. With what force would the waters pass down along that retaining wall from the dam down as far as past the red mill? Could a man stand in it?

A. He could not.

Q. Was it strong enough to carry stones and boulders during such highest flood water?

A. I suppose it carried more or less.

Q. Do you know who put in the dam which appears on the map Exhibit 1 shown from the head of Island Number 4 up to the south end of the Government dam, by whose authority it was put in?

A. I don't know absolutely, but I took for granted it was the Kaukauna Water Power Company or their employees.

Q. When was it first put in?

A. I could not give the year now.

Q. Was it before or after yourself and Meade commenced to improve the middle channel?

A. Before the improvement.

Q. When did you commence improving the middle channel?

A. I think it was in the summer of 1881.

Q. What effect has the putting in of that dam from the head of Island Number 4 to the south end of the Government dam upon the flow of the Fox river?

303 A. To deflect the water passing over the dam down the north channel instead of partially down through the south; all through the north channel instead of partially down the south.

Q. What effect has the placing and keeping in of that dam mentioned from the head of Island Number 4 to the south end of the Government dam on the condition or formation of the bed of the river from the Government dam down to the head of Island Number 4, and thence on down as far as the figure minus 5 and $\frac{92}{100}$ upon Exhibit I?

A. I think that specially in the narrower part of that part of the river it would move larger stone than prior, and it would therefore carry some material down that might not have been carried with the south channel open.

Q. Would it or would it not tend to fill up and make higher the bottom of the river along down the dam mentioned from the Government dam down to the head of Island Number 4 than that part of the bed was before that dam was put in?

A. I think not. I think, if anything, it might remove some of the smaller stuff more than it would with the south channel open.

Q. Has the wash and flow of the river been strong right up to and against the dam mentioned from the head of Island Number 4 to the south end of the Government dam?

A. Not, perhaps, as strong close to it, but off a little way perhaps the strongest.

Q. How far off?

A. I should say the strongest current would be possibly not over $\frac{1}{3}$ way from the temporary dam to the north end of the Government dam.

Q. Would not the effect of that be to carry in against the temporary dam and against the bank of Island Number 4 more or less material and to fill up the channel on the ground mentioned?

A. I think not. I think it would not leave as much in the present condition as it would have done if the south channel had been open. I think there would be less deposit opposite the temporary dam than opposite the Government canal bank or retaining wall?

Q. Why?

A. Because the water tends to collect in the angle more than it does on the U. S. canal side from the larger overflow in this angle and in proportion to the area of the river, and that therefore the tendency toward the side of the temporary dam for a ways below, for a few hundred feet, 2 or 3 or 4 hundred feet below, the Government dam.

Q. At what point is the north channel the narrowest be-

304 tween the head of Island Number 4 and the mouth of the middle channel?

A. About 550 feet.

Q. What is the width of the channel at that point, north channel?

A. 240 feet; 245 feet possibly.

Q. Give us the width of the north channel at the various places marked with your blue figures, which indicate the flow in the river as shown on Exhibit I.

A. At point marked minus 4.81, 350 feet; at point marked minus 5.23, 320 feet; at point marked minus 5.61, 285 feet; at point marked minus 9.92 feet, 273 feet.

Q. Will you mark now on Exhibit I the point which you gave us the width at as being 550 feet below the head of Island Number 4—that is to say, at the narrowest point in the north channel as you have given it?

A. Between marks of arrow heads where I write, "Narrowest place."

Q. On Exhibit I appear two lines of red figures across the north channel, near the head of Island Number 4. What do those figures indicate?

A. The measurements down from the bench-mark, already given, at foundation of store to the bed of the river.

Q. What is the distance between the two lines of red figures shown upon the map Exhibit I, about?

A. About 120 feet.

Q. In order to ascertain the depth of water as shown by the up-stream line of red figures, how shall we proceed?

A. We subtract the height of the surface of the water, which would be 4.47, from the red figures. This gives us the depth of the bottom below that surface at the head of the island. The surface of the water will not be a true level across.

Q. If it is not a true level, how far will it vary from it?

A. I think we found in August from one to two tenths of a foot.

Q. What does that mean?

A. Of a foot; from an inch to two and one-half inches; about that; I will not say exactly.

Q. Do you mean by that the surface of the water in the north channel will not be a true level across from the north side to the south side?

A. Yes, sir.

Q. You are not referring to the surface formation of the bottom of the river?

A. No, sir; if there was a deep hole the water would rush for that deep hole, making a deflection of the surface of the water.

Q. By reason of the strong current?

A. Yes, sir.

Q. But for the purpose for which I am now asking the question I think that difference will be immaterial. How deep was the water over against the Government retaining wall of the
305 canal as shown by the red figures next to the wall 6.63?

A. If the water was assumed level from the head of Island Number 4 across, it would be 2 and $\frac{16}{100}$.

By Mr. CARY:

Q. How can the depth of water at any point in the north channel indicated by the downstream column of red figures be ascertained?

A. Assuming the water to be level across the river and the same as at minus 4.81 on the north margin of the island, you would get the depth by subtracting 4.81 from the red figures in that column.

Q. That would give the depth indicated from the red figures from which you subtracted?

A. Yes, sir.

By Mr. ORDWAY:

Q. Where is the greatest rush of water in a time of high water down the north channel opposite to the head of Island Number 4? Is it upon the south side of the north channel or upon the north side of the north channel?

A. I should say a little south of the center of the channel; a little nearer the island. The reason why I would say is because the water in going over the dam tends to fill the angle formed between the temporary dam and the Kaukauna dam more fully than near the north end of the dam near the retaining wall, and therefore it would tend to keep that side of the river a little more. There is another reason: When we were taking our levels we found, a few hundred feet above the head of Island Number 4, perhaps 200 feet or so—we found a rapid place where the men could hardly stand in holding the rods, and they reported that there was smooth rock there, and we found a deeper place and a most rapid current at that stage in that place.

Q. Was that near the center of the Fox river at that point?

A. I should say not very far from the center of the channel of the whole river.

Q. You gave among your reasons why the flow of the water down the north channel would be strongest a little south of the center over against the head of Island Number 4 that the water flowing over the dam would tend strongly against and towards the temporary dam across the mouth of the south channel, and thus filling the angle between the Government dam and temporary dam would be forced more strongly south of the center of the north
306 channel. What depth of water did you find in that locality which you mentioned where bed rock—smooth rock—was found in that vicinity?

A. I could not give the exact difference. I should judge it was about middle depth for a man; about to his navel, probably.

Q. Did you see men in there when they were making the measurements?

A. Yes, sir.

Q. Is the surface of the bed rock under the channel, about 200 feet above the head of Island Number 4 where you stated you found the solid rock, substantially level across from the south side to the north side of the river?

A. That I could not give from actual knowledge, but judging

from what I know of the river about opposite the head of island when they built the Kaukauna dam, I judge it must be pretty nearly level.

Q. How much of a surface of the bed of the river below the Government dam is now covered with debris—that is to say, earth and stone and other material—and above the upstream line of red figures shown on the map Exhibit I?

A. I should say that from, perhaps, 30 feet below the Government dam down to nearly the upstream column of red figures away across the whole river to the south shore that it was nearly all covered with debris from one to 2½ feet deep or from nothing to 2½ feet deep and very little clear rock exposed except a patch pretty near the middle of the river 2 or 3 hundred feet above Island Number 4.

Q. Is not that exposed place which you speak of as bed rock near the middle of the river much nearer the north side of the river than it is the south side of the river?

A. Not much. It is not very far from the center; maybe a little north of the center of the whole channel, from memory. I think, perhaps, I can give it more correctly from notes.

Q. How many years has that temporary dam which is indicated on Exhibit One been in?

A. I should say this one in this locality about 3 or 4 years; before that, possibly.

Q. There has been one in there 10 years altogether?

A. I should think pretty near ten years. I cannot give the exact dates now.

Q. During that time there has been no water to speak of, has there, running down the south channel?

A. Except what broke through or was let through the dam and tail race of the machine shops.

Q. The tail race of the machine shop don't discharge water in the surface of the south channel?

A. Yes, sir.

307 Q. Is it not true the immense rush of water down the north channel is added to by putting in of that temporary dam across the mouth of the south channel?

A. Yes, sir; it has, especially in high waters; it has made a great difference.

Q. When the Kaukauna Water Power Company's canal is closed and the wheels not running, the effect of that temporary dam is to send the water of the Fox river down the north channel?

A. All except what is used through the canals.

Q. Is it not true that in high water, when the rush is immense, as you have mentioned to us, that the tendency of that rush down the north channel is to clear it out and deepen it over and above what is was before?

A. Yes, sir; the tendency would be that way.

Q. At the same time there would be no rush down the south channel to clear that out, would there?

A. Very little.

Q. You, together with Meade, improved the middle channel at one time, did you not?

A. We did.

Q. I think you stated a little while ago that you commenced about 1881.

A. I think it was in 1881.

Q. Has there not been a dam across the north channel from the head of Island Number 3 toward the north bank of the north channel for the purpose of turning the water into the middle channel almost ever since you and Meade completed that improvement on the middle channel?

A. After perhaps two years I should say there was a temporary dam put in.

Q. That dam has been changed in form different times from that time to this, has it not?

A. Yes, sir.

Q. And the location changed somewhat?

A. Yes, sir.

Q. That dam exists today?

A. Not the original wing dam.

Q. There is a dam at the head of Island Number 3?

A. Yes, sir.

Q. So long as you had it, you and Meade, did you extend it clear across to the north bank of the north channel at any time?

A. The more temporary dam from the head of Island Number 3 first run up towards the flouring mill of A. L. Smith, and by tacit consent the Union Pulp Company so built it to the north bank, probably two years after the construction of our work.

Q. What was the object of putting that dam across there?

A. To turn the greater volume into the middle channel.

Q. Is there a dam across from Island Number 3 to the north bank of the north channel now?

A. There is.

Q. About how high?

A. It would run from about 2 feet to four feet high on the rock bottom.

308 Q. What is that there for?

A. It is to hold the water to increase the flow into the middle channel.

Q. How soon after you completed your dam and retaining wall on the middle channel was this temporary dam first run out into the river from the head of Island Number 3, as you say, for the purpose of increasing the flow of water into the middle channel—what season did you put out that wing dam?

A. I could not say just the year. I should say about two years after the Meade and Edwards works were put in.

Q. You say *and* Meade and Edwards' work was put in in 1881?

A. I think it was commenced in 1881.

Q. When was it finished?

A. Mainly in the fall of 1881, and some work was finished up in the spring of the next year.

Q. Finished up in the spring of 1882?

A. I think it was.

Q. Your best recollection is you put that wing in about two years after?

A. About two years after. It was put in by the Union Pulp Company.

Q. Who is the Union Pulp Company?

A. Rogers is the managing man.

Q. Was that put in before Mr. Patton built his pulp mill on the middle channel?

A. My impression is that it was put in after Mr. Patton built his mill. I am not very distinct as to that.

Q. Why was that wing dam put out there at the head of Island Number 3?

A. To increase the volume into the middle channel.

Q. Was there water enough without thus increasing the volume into the middle channel to run the machinery which had been put up to be run by the power on the middle channel?

A. I think not, because they put up a greater power.

Q. Can you give us the formation of, width of, distance on, of the south channel some time during the continuance of this examination, and will you do so?

A. I will.

Q. Can you do so now?

A. Yes, sir; after making some measurements.

Q. Can you give us a correct profile of the stream and its course, its banks both sides from the Government dam up around, clear upstream from the bend above the Government dam?

A. I cannot at present.

Q. Can you at some future time?

A. Yes, sir; I think I can give quite correct within 10 feet of the exact shore, within ten feet of the shore; the water banks on this shore are mostly pretty abrupt.

Q. The banks are high and bold on both sides above the Government dam?

A. Yes, sir.

309 Q. About when can you give us that profile?

A. You mean a map?

Q. I want to see the exact form of the shores on both sides clear up around the bend a little.

A. Yes, sir.

Cross-examination by Mr. HOOPER:

Q. What is the nature of the bank on the south shore of the river above the Government dam, high or low?

A. The natural bank on the south shore was not very high. Above the original stream for perhaps 1,500 feet or more above the south end of the dam it is made abrupt now by the embankment, so the water does not extend much more in height than in low water.

Q. How is the bank on the north side of the river for 1,200 feet above the north end of the Government dam?

A. It is pretty abrupt from the present level of the pond for at least 2,000 feet. There is a slight fall up above there for a hundred feet rather low to the present pond.

Q. How was the bank at the natural level of the stream above the north end of the Government dam?

A. I have not sounded much of the way, but judge there was a rather steep descent of the shore most of the way. There were little points that were rather level for 40 or 50 feet, but mostly I should judge it was pretty abrupt.

Q. Downstream from the south end of the Government dam how is the shore?

A. The shore is very gradual from the foot of the bank into the water, so that medium water would find quite a variation in its rise and fall; then there is a slight bank.

Q. How high?

A. About 4 to 5 feet, I should say—perhaps 4 feet high—with slopes back from there to the hills, which are 12 or 15 hundred feet distant—the bluffs; quite a level piece not very much above the river.

Q. On the north side below the mouth of the Government canal and along the Government canal how is the north bank?

A. It is very abrupt in some places. The bluff is quite steep pretty near to the water. In other places there is a steep bluff and a little more gently towards the canal in places.

Q. How far does that run in that way?

A. Nearly to Wisconsin avenue.

Q. About how many feet down?

A. There it begins to be a little more gradual to nearly the swing-bridge over the canal, and then it is a little more gradual and not quite so abrupt from there to the lock.

Q. About how many feet down?

310 A. I should judge from the end of the dam 12 or 15 hundred feet; fully 1,500 feet, I should say.

Q. Where did you judge from the formation you found and low land that the Government canal was built, with reference to the north water line of the river?

A. My impression would be that it must have been built in the river bed—the embankment wall down pretty near to where the flouring mill of Smith is.

Q. How far into the river bed should you judge that this retaining wall was built?

A. I could not say, but from the meander I should judge it might be half the width of the canal in places.

Q. Where would that put the embankment between the retaining wall and canal—in or out of the bed of the river?

A. The embankment, I should judge, would be most of the way in the river, and also the retaining wall.

Q. How wide is that embankment?

A. I should think 18 or 20 feet on top, and I should judge that

the slope was about 2 to 1, probably 18 feet on top, and a slope of 2 to 1, from 12 to 20 feet high in different places, so it must bring it from 40 to 60 feet pretty near from the face of the wall, interior, to the foot of the embankment from 40 to 80 feet.

Q. 40 to 60 feet including or excluding the retaining wall?

A. I should include the retaining wall.

Q. You testified on your direct examination that that retaining wall was about 4 feet wide on top. Is there any regular width to that wall?

A. I think not.

Q. Is there any face to the wall on the canal side?

A. No, sir; not that I know of. I think it is irregular.

Q. Would it follow, then, that that wall is any thicker at the bottom than at the top?

A. Yes, sir; it would not stand without being a great deal thicker than it is at the top.

Q. The distances you have given for the most part you have given by applying a scale to the map Exhibit I?

A. Yes, sir.

Q. Do you know that those distances would prove to be correct on actual measurement?

A. Within a very few feet—within five feet, I think—we would find them correct.

Q. Did you make the map?

A. I did not draw the map itself, but I made the original from pencil-work and scaled our work, and we proved it afterwards by observations.

Q. You had to make the map from actual surveys on the ground, did you not?

A. Yes, sir.

Q. Have you not, then, the same figures now to give us the distances from that you used in making the map?

311 A. We did not take just those distances in all cases.

Q. Then how do you know the map correctly represents those distances if you did not take them?

A. Our method of getting out a map would do it.

Q. Explain that method of getting out a map.

A. We would start and run a straight transit line or base lines to work from and then take measurements to the shore, offsets, or in some cases steadier works, fixed points around bends, and plat*ted* them, those points, and draw them by cords or straight lines, which we put in by eye on the ground, sometimes connecting the points with straight lines that fixed where it was nearly straight or quite straight on the ground. We would get, for instance, the angle and direction of the wall and length along the retaining wall, and that would fix the distance, so we could measure from that retaining wall to certain points.

Q. How did you fix the head-lines of the shores and islands?

A. We measured offsets from our transit or base line mostly; in some case-, I think, we used the steadier work to put in some shores; this north shore of the island I put in by offsets from our base line.

Q. Where was your base line?

A. Up there at the oak tree and from *then* every 20 to 30 feet on the north shore line.

Q. How did you lay the south shore line?

A. We measured across that on certain lines. We took levels and soundings across that shore on those lines to fix certain points about as near as we could judge the water lines of the shores.

Q. How did you fix the south shore of the south channel?

A. There I run at one time a base line up that shore, and I think that most of the work I fixed from that survey I made of that base line, running up and connecting the head of the south end of the dam. We have also taken measurements in connection with this leveling of the cross-sections of the channels to fix this shore.

Q. How did you determine what you would call the medium water line?

A. By taking, perhaps, the indications of the shores in some cases as to the ripple of the water where there has been a worn place or where as near as we could judge how the water would stand if it was six inches lower than it was when we took it by a guess of a fair low stage of water. That would have been using our judgment in that respect.

Q. That was a question of judgment?

A. Yes, sir.

312 Q. And not a question of seeing the thing?

A. No, sir; not of seeing it.

Q. The high-water mark, how was that fixed; the same way?

A. The same way; by the banks.

Q. A variation of a few inches in height would make a variation of a number of feet in distance?

A. It would on low-water mark, but not so much on high water.

Q. How far would a drop of six inches from your low-water mark have carried you out in the south channel?

A. It might have carried us out 15 or 20 feet in places.

Q. The drop of a foot?

A. The ground is so level that after, perhaps, six inches that it would not; it might in places carry it out a great deal and leave quite a point.

Q. Might have carried you entirely across the south channel?

A. It would have been a little deeper than that in a good, fair stage of low water; you would never have more than six inches, probably.

Q. Did you take a level from the surface of the water in the north channel to the south channel at this time?

A. I did. I made a full cross-section of the south channel and above the south channel, the head of the south channel, and 6 or 8 hundred feet above, quite correct levels running across the bottom of the channels and up on the banks.

Q. For the Kaukauna Water Power Company?

A. No, sir; for myself and the Green Bay & Miss. Canal Co.

Q. At the time you made the surveys for the Kaukauna Water Power Co.?

A. These surveys have not been made expressly at any one time for the Kaukauna Water Power Co. on this work.

Q. You said you made surveys for the Kaukauna Water Power Company in '88?

A. Yes, sir; we made levels in '88.

Q. Did you then level from the surface of the water in the north channel to the south channel or to any points in the south channel?

A. I don't recollect that we did, except this line that runs from the south end of the dam down to the headlands?

Q. Why didn't you?

A. We had quite a large amount of surveying in regard to this, and they didn't ask much of any surveying at the head of the island in their questions.

Q. You were not asked to make cross-sections of the south channel?

A. No, sir,

Q. Were you asked to make cross-sections of the north channel?

A. I don't think they did require it, although we did put on some measurements we made.

Q. You made those cross-sections of the north channel without their request?

A. I think we did.

313 Q. But did not make cross-sections of *of* the south channel at that time?

A. No, sir; we did not make those cross-sections at that time. The water was not in such a condition to allow it. We made those a year or more before.

Q. How far is it from the head of Island Number 4 to the foot of the Kaukauna Water Power Company's canal?

A. About 1,300 feet.

Q. Where is the tail race of the Badger paper mill with reference to the foot of the canal?

A. Perhaps 100 feet above the foot of the canal.

Q. Is that the distance downstream or the distance, including the crossing of the stream, which you have given?

A. I would say that distance is down the south channel—from the head of island down the south channel.

THURSDAY—two p. m.

Redirect examination by Mr. ORDWAY:

Q. Have you since the adjournment taken measurements of the south channel, and can you now give us its width at certain points downstream from its mouth? If so, proceed to give us such measurements and widths.

A. I have taken such measurements. They are as follows: About 30 feet below the old bridge as shown across this south channel on Exhibit 1 we found a fair measurement and made the south channel to be at what we judged to be a fair low stage of 270 feet as near square across the channel as we judged by eye and

about 190 feet below the last measurement. At two hundred feet below the last we found the width to be about 255 feet, and two hundred feet below that the shore was pretty well marked and we judged that this fair low stage would fill about 240 feet in width. From this point down the south side is broken up; it was very difficult to find anything that was very satisfactory as to width.

Q. How far did that carry it down with reference to the downstream end of the Kaukauna Co.'s canal?

A. About half or a little more.

By Mr. CARY:

Q. From your knowledge of the south channel of the river is it narrower or wider below the points at which you have given measurements than the distance stated by you?

A. From my knowledge, it is generally wider than those distances. I should say from 50 to 150 feet, I should judge, wider than those I gave.

314 Q. Do your measurements show the narrowest part of the south channel?

A. Except possibly down farther than the end of the Kaukauna Water Power Company's canal. Possibly down below there there may be narrower neck or about as narrower a neck.

Q. But at no point above the south end of the Kaukauna Water Power Company's canal is it higher than any distance you have given?

A. From my judgment and memory of the locality before it was disturbed I should say there would be no narrower place than those I have given. In the widest places, which I think occurred about at the lower end of the Kaukauna Water Power Company's canal, there were narrow islands above and I think extending below that canal; above the foot of that canal and I think extending below the foot of that canal and including the width of those islands I would say generally that it would exceed the measurements I gave 100 to 150 feet, and there may be a place without any island either above or below one of these islands I speak of where the clear distance would be perhaps 400 feet. It is from my memory and having surveyed a good deal around there that I get this impression.

Q. You went on to state what you thought the available channel would be.

A. The available channel, I should suppose, would average 275 or 300 feet most of the way from those measurements down.

Q. Where was the sharpest fall between the head of Island Number 4 down the south channel and above the lower end or at the lower end of the Kaukauna Water Power Company's canal?

A. It would be so near on a grade that I don't think I could give it now without reference to the surveys and I don't know as I could state then very definitely. I should judge, though, it would be the lower half. I mean the lower half of that part of the channel named in the question.

Recross-examination by Mr. HOOPER:

Q. How high are these island-, Kaukauna Island Number 4, with reference to the land on the south side of the south channel against the islands?

A. I should say that the islands were a little higher than the immediate shore on the south side after you get perhaps 200 to 300 feet below the bridge on the map Exhibit 1, and above that point of 300 feet below the city bridge the banks are higher than the islands.

Q. You say the banks are higher?

A. The bank, I should say.

315 Q. How high above the natural average water surface were the islands you mentioned in the south channel?

A. Not over a foot to one and a half feet above in a fair stage of water, I should say.

Q. Any timber on them?

A. I don't recollect of any trees on any of these islands.

Q. What is the elevation of the line you called the medium water line on the south side of the south channel as compared with the elevation of your blue lines along the dam and down the north side of Island Number 4?

A. The blue lines on the shore were intended to represent the same level as given by the blue figures along that line upon a line pretty nearly at right angles to the direction of the south channel at the corresponding points on the medium water line.

Q. Do you know whether they were or not—they were intended to; do you know whether they were or not?

A. I don't recollect myself so I could swear they were copied exactly; but this was copied from drawings I made and I had located on those water heights, and I think those were taken from it; I have not verified that.

Q. Did that survey include the elevation of what you call this medium water line?

A. It did.

Q. Did your survey show that that elevation corresponded with the elevation of the blue line given at the same distances up and down the river?

A. So far as I have tested it I think it is correct.

Q. Did you test it to know if it is so?

A. Yes, sir; when I made the survey I did. I have no reason to doubt it is right here, but I could not absolutely say.

Q. Do you know the elevation of the line you took in your measurements which you have made today in running across the river?

A. I don't.

Q. At the points at which you measured would a few inches difference in elevation make considerable difference in width?

A. In a few places; in some places it would; not very much, I judge, on the paper and on those cross-sections I gave below the bridge which I measured this noon.

Q. You gave the difference in level of the south channel at the head of Island Number 4 and at the lower end of the Kaukauna Water Power Company's canal; at what did you give that distance?

A. About 4 feet and ten inches.

Q. Was the water in that channel when you made that survey?

A. It was not.

Q. Did you estimate for the surface of the water?

A. We took the original bed rock where it had been undis-
316 turbed, the rough appearance of the rock; assumed that to be parallel with the surface of the water, which would be very nearly correct, I judge.

Q. Was there water in the channel so you could measure the fall of the water?

A. There was not, but the width of the channel was such at the upper and lower end that the water would assemble in the center of the channel—that is, where we took most of the measurements it was such that the water would be about the same depth, so level, so smooth, the bottom of the channel.

Q. The north channel you measured the slope of the water?

A. Yes, sir.

Q. How did you fix the head of the island?

A. There is a tree growing near the head of the island, possibly a foot in diameter; we found a projecting point extending a few feet above that, perhaps about 12 or 14 feet above that, which seemed to have been the original ground of the island undisturbed, and we drove a stake there and called that the head of the island.

Q. Had no relation to any meandered lines?

A. No, sir.

Q. Has not the natural bank been disturbed any there in that vicinity?

A. It has probably been worn away, more or less, but not excavated by any improvements.

Q. Has it not on the south side of the island south of the dam?

A. Not, I think, in the vicinity of that, except where the temporary dam is built out, until you get pretty near the road; when you get pretty near the road there has been a filling in and change.

By Mr. ORDWAY:

Q. How long have you known the head of that island personally?

A. I have been around it for 15 to 18 years, but specially to survey it probably 12 years ago; I noticed it specially, I think, as much as 12 or 14 years ago.

Q. Has it changed any in that time?

A. Very slightly, if any.

By Mr. HOOPER:

Q. Do you know the cross-section opening at the head-gates of the Kaukauna Water Power Company's canal?

A. I have not measured those that I have any record of.

Q. What proportion of the water in the ordinary spring freshet

is carried in the canals, the Government canal and the Kaukauna Water Power Company's canal?

A. I should say not over one-fifth, maybe; not less than $\frac{1}{5}$ could be carried through the mills.

Q. Does carried through the mills and carried through the
317 canals amount to practically the same thing?

A. About the same thing.

Q. How long do those ordinary spring freshets last?

A. I should say from a month to two months.

Q. Is there a corresponding fall freshet ordinarily?

A. There might be a slight freshet in the natural river. There might be a slight rise in the fall generally, but once in 5 or 6 years there might be quite a considerable rise in the natural river, but with our lake and the water lowered during the summer it swallows most of those freshets except the unusual spring freshet; then once in awhile, like the fall of 1881, there was a great freshet in the fall, and once in the summer in August there was quite an extensive freshet since I have been in Wisconsin.

Q. What part of the flow of the water in the freshet of the fall of 1881 could be carried through these canals and mills?

A. Not over $\frac{1}{5}$, I should say.

Q. How large a flow was there in the river in the spring freshet of 1888?

A. That was fully as large as or larger than in 1881—about the same.

Q. How much of a flow?

A. Somewhere near a million cubic feet per minute flow. I measured it in 1881 and I made it not quite a million, and then in '88 there was a larger flow coming down, and I judged it was a million and a little over.

Q. Of the four feet and 10 inches fall from the head of Island Number 4 to the foot of the Kaukauna Water Power Company's canal, how much was in the first half of the distance, in your opinion?

A. No less than half. I would not want to say how much; it would be difficult to state it without measurement.

Q. In giving the distance from the head of Island Number 4 to A. L. Smith's flouring mill, did you include the distance across the river or only the distance down the river?

A. I think we gave from the head of the island directly.

Q. Diagonally across the river?

A. Yes, sir; it would be partially in the direction of the river part of the way, but part of the way diagonally across.

Q. How much would the distance be if you run directly down the stream?

A. Starting where? Probably make 80 or 90 feet less distance by measuring squarely across to the Government wall a straight line.

Q. Suppose you measured down the Government wall?

A. About as long as my first distance, I suppose. It would be part way between the two.

Q. Give us what the distance would be down along the wall.
318 A. It would give about 70 feet.
Q. 70 feet less?
A. Yes, sir.
Q. And make the distance how much?
A. 790.
Q. When you took the levels of the south channel on the bed rock to get the fall, what was the elevation of the bed rock as compared with your datum for elevation?
A. Near the mouth of the head of the south channel, being minus 6.70 below, we took just below the bridge and found it 6 and $\frac{7}{10}$ below the top of the foundation wall of that brick store.
Q. That was a point where the debris and hard pan had been cleared off from the bed rock?
A. Yes, sir; and about the middle of the channel.
Q. Do you know what thickness of hard pan or debris had been cleared off at that point?
A. It seems to work off gradually to nothing around that.
Q. Do you know?
A. Yes, sir; it seems to play out right at that spot and gradually and gradually work thicker to points above and sides.
Q. And points below?
A. Below they have removed some rock; quarried below and disturbed it.
Q. Had they removed the material at this point where you measured it?
A. No, sir; except flat stone.
Q. Might have been some stone and gravel removed from that point?
A. There might have been some, but I guess it hadn't been disturbed much. It appears there, though possibly there might have been a bare spot.
Q. Was the bottom of the channel around there as low as that?
A. It gradually wastes to nothing at that point; the gravel plays out.
Q. Then the bottom of the channel was not as low as that point?
A. That might have been the bottom of the original channel.
Q. Is the channel as low as that in that vicinity around that?
A. Not generally, because there is material filled in at other points.
Q. Was that the general level of the channel at that spot?
A. Of course, around it may be shallower places because we could find even on the gravel as shallow, as deep places on the gravel, as deep as that rock, maybe. Of course, there are higher places than that rock in that neighborhood in the channel.
Q. Was not that a particularly low point?
A. I could not say; I did not observe; that is the deepest water in that neighborhood. I have no reason to doubt that spot is the bottom of the original channel.

Q. Wherever there was a change it would be likely to change to a higher level?

A. Yes, sir; to obtain the slope of the south channel we
319 took just above the old bridge, close to the old bridge at the head of the south channel, and leveled on the bed rock which had been undisturbed so far as the rock is concerned, and lower down, nearly opposite the foot of the Kaukauna Water Power Company's canal, which is a place as near the center of the channel and undisturbed rock as we could find to obtain the general slope of the south channel.

Q. At both of these points the bed rock from which you took that level, you say, satisfied you it was the bed of the south channel at that point?

A. I am satisfied it was the slope of the bed rock.

Q. You have stated that both of these points was the bed of the channel at that point?

A. I am not fully satisfied, because there have been so many changes and both of them may have been covered at some past time, possibly the upper, it is a little more likely, because the bridge is right there and the current due to the location of the piers of the bridge might have scoured that down to the rock. Still it would look in the neighborhood as though there was not much difference between that rock and the original bed of the river. I have no reason to think there is very much difference.

By Mr. ORDWAY:

Q. Do you think it was the original bed of the river or the surface of the original bed rock of the river?

A. My impression would be that it would be a little more likely that there might have been some gravel on that, and, the bridge having been in so long, that the current and ice might have scoured it there a little after the bridge was put in. I should think very likely that is the case.

Q. That is the upper one?

A. Yes, sir.

Q. Now, as to the lower?

A. That is as I recollect it in times past it was pretty bare rock, with the exception of floating stone. In going across the channel I recollect I tried to cross there once without wetting my feet. It was pretty near bare rock, except where this little island occurred. I should judge the lower end was more likely to have been uncovered than the upper one. The accumulation of broken stone, gravel, and cement occurs on that part of the river, for the reason it is a little flat-er from the island up to the dam. I think the bed rock must be flat-er, and it is almost level from the top of the
320 island to the dam, while below that it has quite a slope, quite a large slope.

Q. Do you think there is any man that knows where the original bed of that river is better than you do?

A. I don't think there has been as much surveying and leveling done as I have done in that locality.

Q. Can you tell from the looks of the surface of those rocks as they appear in the mouth of the channel whether they have been disturbed?

A. Yes; I can tell the surface of the rock.

Q. Does not that rock above the bridge first point taking levels? Don't that indicate from all appearances you have discovered that it was the surface of the bed rock of the bed of the south channel?

A. Yes, sir; it is the bed rock of the south channel undisturbed.

Q. And is it not true of the surface of the rock upon which you took the lower level?

A. Yes, sir.

Q. Have you any knowledge of your own that there has been any gravel or cement of any kind fastened to, plastered to, attached to the surface of those rocks at those two points you have given us the description of?

A. No, sir.

BAZILE H. BEAULIEU, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. What is your name?

A. Bazile H. Beaulieu. I live in White Earth, Minnesota, and am 74 years of age.

Q. How long have you lived there?

A. 12 years.

Q. Where did you live before going there?

A. I lived in this place, Kaukauna.

Q. Was your father a Frenchman?

A. Yes, sir; he was a farmer here and my mother was a Chippewa Indian.

Q. At what place in Kaukauna did you live?

A. Right across the river here, south.

Q. How far from the Badger paper mill, this one the further-st down the south side of the canal?

A. I should think about ¼ of a mile.

Q. When did you go there to live first?

A. I came out there in the fall of 1835.

Q. Where did you live before that?

A. I lived in Green Bay.

Q. When did you go to Green Bay?

A. In the summer of 1833.

Q. What was your business when you lived on the south side, here at Kaukauna?

A. I had a saw-mill there.

Q. Who built the saw-mill?

A. I think it was built by the Government for the use of the Indians, the Stockbridge Indians.

Q. Did you buy the property afterwards?

A. My father and James Boyd bought the property.

Q. Mr. Boyd who lives here in Kaukauna?

321 A. Yes, sir.

Q. Did you yourself afterwards build a mill in the same locality?

A. Yes, sir.

Q. What kind of a mill was that?

A. I built a saw-mill, repaired that saw-mill, and then built a grist mill afterwards.

Q. How far was that from this Badger mill?

A. About ¼ of a mile—maybe further and maybe nearer.

Q. Which way?

A. Downstream, below.

Q. What furnished the power to drive your mill?

A. The south channel of the Fox river.

Q. Did you construct a dam there to raise a pond of water?

A. There was a dam there when I bought it. I looked at it occasionally; one there about 800 feet.

Q. One end rested on the south shore?

A. Yes, sir.

Q. Where did the other end rest?

A. Right in the stream.

Q. Did it come across to any little island?

A. Yes, sir; it came out on a little island.

Q. Entered the same little island?

A. Yes, sir.

Q. Was that dam above or below where the little creek comes in?

A. It was a little below.

Q. So the little creek fed water into your pond?

A. Yes, sir.

Q. What year did you build the grist mill or construct it?

A. I began that in '38 and finished it in '39.

Q. How many run of stone?

A. One run.

Q. Where did you get them?

A. I bought them out of the old mill of Grignon's.

Q. On this side?

A. Yes, sir.

Q. Below here?

A. Yes, sir.

Q. How long did you run that grist mill?

A. About 20 years.

Q. Was there any other dwelling-house on the south side of the river here at Kaukauna from the time you built yourself and came here to live in '34—was there any other house on the south side of the river besides yours?

A. There was a house about half a mile below here—a travelers' house—owned by a man named Gerner, a negro.

Q. Was there any other house in the year '35 upstream from you?

A. There was another house there left by the Indians when they moved down to Stockbridge on Lake Winnebago. There was a school-house right opposite here—a little mission-house.

Q. What was that built of?

A. It was a frame house.
Q. About where did that stand opposite here?
A. That was away above the dam, on the south side.
Q. Do you know anything about the mission-house?
A. That is the one I speak of—an old house; it had a stone foundation; it was a mission-house.
Q. Was you acquainted with the south channel of this river up from your place up to its mouth where it comes out into the main river?
A. Yes, sir.
322 Q. Are you acquainted with the middle channel?
A. Yes, sir.
Q. And the north channel?
A. Yes, sir.
Q. Who, if any one, lived over on this side of the river as early as '35?
A. A man named Paul Ducharme.
Q. Who else lived here on this side?
A. The Grignon house on the bluffs.
Q. Further downstream?
A. Yes, sir; a little further back, near the bluffs.
Q. Was there any other family on this side of the river in '35, that you remember of?
A. No, sir; not at that time.
Q. How did you used to get over here, if you came over during the year 1835?
A. When the water was low, occasionally they came afoot. I never did. I always came a horseback.
Q. How many years was it before some other people came in on this side, neighbors to Ducharme and Grignon?
A. Two years.
Q. Can you remember who came in next along about that time?
A. Mr. Lawe came in.
Q. What place did he go into?
A. He built a house right opposite Ducharme's old house, near the Grignon families.
Q. Where did the people come from who patronized or came to your grist mill?
A. They came from Green Bay, away down from the bay settlement and away south from Waupun.
Q. Was there any one on this side of the river in those years that came over to your grist mill?
A. A few, when they got wheat raised. When I got the mill built there was no wheat raised and no farmers.
Q. When did you get the grist mill to running?
A. In 1839.
Q. Grignon's people came over to the mill?
A. Yes, sir.
Q. Did Lawe ever come over to the mill?
A. I could not say; I don't remember.

Q. Did you ever cross the south channel up near the head of that large island we call Island Number 4?

A. I think I did.

Q. How frequently did you cross that south channel?

A. I did it oftentimes. I could not say how many times.

Q. Before the Government dam was built—before the improvement was commenced—how many times—how often did you cross that south channel?

A. I crossed it every year a dozen times, because I had business here. I came across to go to Grignon's store. I crossed it oftentimes.

Q. Do you remember how much water run in that channel those early years before the dam was built—how deep was the water?

A. There was a great deal of water there before the dam was built—as much as two feet of water all the time.

Q. Where was the most water, in the south channel or
323 middle channel or this north channel, in those early times?

A. I believe there was deeper water in the north channel, but it took back the second channel. Of course, there was more water on that side than there was on the north side.

Q. You mean there was more water in the south channel?

A. Yes, sir; more water in the two channels than in the north channel.

Q. How deep was the water as you cross the north channel below the mission-house, below the head of Island No. 4?

A. From 18 inches to 2 feet, about.

Q. Did you ever see the water very high—at a stage when it was very high?

A. Yes, sir; I have seen it very high. We dreaded to go over, and could not ford it for a day or so.

Q. Did you ever see it when it was so high it flowed over large Island Number 4?

A. No, sir; I don't recollect that.

Q. Did you ever see it when it was very low, when the river was very low?

A. I have seen it when it was pretty low sometimes.

Q. Did you ever cross the south channel when it was pretty near dry—the south channel?

A. After the dam was built?

Q. Before.

A. I never saw it to have less than a foot of water.

Q. Did you ever cross the middle channel when it was nearly dry?

A. Yes, sir; no, not before the dam was put in; there was always plenty of water.

Q. In the middle channel?

A. Yes, sir; more water in the middle channel than there was here. They used to take these Durham boats through the middle channel rather than the north channel.

Q. What was the trouble getting boats up the north channel?

A. Too many boulders; too low water down where the quarry is.

Q. Where Grignon's mill was?
A. Yes, sir.
Q. Here is a map.

Plaintiff objects to using a map not proved to be correct in any respect; object to the witness being examined in reference to map not introduced in evidence.

By Mr. CARY: We want to have the witness understand, and I want to get at what he means by the middle channel.

Q. How did you cross this north channel, on foot or on horseback?
A. Both ways.
Q. This channel this side?
A. Yes, sir; down below the mill here.
Q. Could you cross it on foot here, this north channel, in a very low stage of water?
A. Yes, sir; very easy.
Q. At what point?

A. At the point where the old Grignon mill was; right be-
324 low that was the fording place for everybody; it was very smooth rock there, and up there were too many boulders.

Q. Where did they cross the middle channel for fording place?
A. They went just where they saw proper; they struck right straight through there or else go down to that eddy; they never went through here; they could not go; there were too many streams and islands in the course.
Q. When you started from Ducharme's house to go to your place could you walk across this north channel anywhere?
A. Yes, sir; either on foot or horseback; I have done it frequently.
Q. Following on, going across here, after you crossed this north channel, the next channel you came to was what you call the middle channel?
A. That is the middle channel; that was a very wide one, 3 or 4 times as wide as the north channel.
Q. You know where the stream runs between the two large islands, called the middle channel?
A. Yes, sir.
Q. Where the dam is, at the lower end, with the lot of mills today?
A. Yes; I know the middle stream; that was a very large stream.
Q. Was it as large as the south channel?
A. It was larger.
Q. At what point?
A. Right straight where that mill is—where those improvements are.
Q. You mean down below that?
A. Yes, sir; I am speaking of the main south channel.
Q. What do you call the next channel from the main south channel, when you come this way, which runs between the islands before you get over to the north channel?
A. That is a continuation of the south channel, is it not?

Q. I will show you a map.

Plaintiff objects to showing the witness a map not introduced in evidence and the correctness of which has not been verified by anybody.

By Mr. ORDWAY: We only show him the map in order to show him the locations of the channels with reference to Islands Number 3 and 4, and the map which I show him is marked Exhibit 2. It is a copy of a map made by Edwards, and one referred to yesterday.

Q. I point out to the witness this side of the river. This is the north channel. I call your attention to a little square I have made in pencil mark on the north channel. I say that is where the Grignon mill was. This is the north channel. As you go east across here on the opposite side of the map, where I make a square with a pencil, is somewhere near the location of your mill?

A. Yes, sir.

325 Plaintiff objects to the making of the point and stating to the witness that it is the location of his mill.

Q. At the upper end of the map is what is represented on it as the U. S. Government dam; that is upstream?

A. Yes, sir.

Q. On the southerly or easterly side of the map runs down what is marked as the south channel?

A. Yes, sir.

Q. It has islands in it, as you see?

A. Yes, sir.

Q. This side of the channel which is northerly and westerly is Island Number 4, which comes up here, and northerly and westerly of what is represented as Island Number 3. Between Islands 3 and 4 is a channel which, you see, is marked on the map Meade & Edwards' water power.

A. There is a big channel there, very big; a pile of water went through that. There was more float-wood at the end of that creek where it united than there was anywhere else. There was more water in this channel than in the north one. They used to go with boats along here when they could go in this channel. The water was so low where the quarry is and so many boulders that they had to go this way.

Q. When you say this way what do you mean?

A. The south channel.

Q. What was the reason you said boats could not go up the north channel?

A. It was too shallow at the foot of it. Right above that there was an island and full of boulders all over, and we could not ford the river here on account of boulders, so we came up to Grignon's mill and took it straight. That is the way we used to go generally.

Q. Where did you cross this middle channel in going across from Grignon's mill to your mill?

A. Right straight below the mouth of it; sometimes we would

not ford it until we followed the creek when we got to this stream, this channel, this south channel.

Q. Did you say boats ever went up and down this channel between Islands Number 3 and 4?

A. Not this one; the south channel they could not go through; there was a fall there, a great big fall; the falls would roll.

Q. At the foot of the middle channel?

A. Yes, sir; you could not go there at all.

Q. And was there not a sharp fall here at Grignon's mill also?

A. A little below Grignon's mill there was a sharp fall there.

Q. In the north channel?

A. Yes, sir.

Q. That prevented boats going up the north channel?

A. Yes; it was too shallow. It was too shallow all along and full of boulders.

326 Q. How far up was it shallow?

A. In here, below the mill, a little island; from that island it was shallow clear up to the main river. When they took the steamboat up they came up here; they could not get up the north channel.

Q. Steamboat when?

A. Many years ago; the Blackhawk.

Q. Was that before the Government canal was built?

A. I don't know. I was over looking at it. They were in the south channel.

Q. You spoke of steamboats running up here before the Government canal was built?

A. No; the canal was built. They tried to get a steamboat up here, but they could not come up the north channel and could not get up the south channel.

Q. How much of the water of the river run down the south channel?

A. I could not answer that, but I think more than fully one-half came in this channel than came in the north channel, more than one-half.

Q. What do you mean by that?

A. I mean there was more water in the north channel than in that channel, but take the south channel and middle channel and, of course, there was more water in those two channels than in the north channel.

Q. That is as near as you can get at it?

A. Yes, sir. That shore comes away out here. The river was very wide, and there was no time but what there was 18 inches to two feet of water. Compared with this channel, it was very little, and there was no more in this channel. There was more in the south channel than there was in the north channel.

Q. At the time of very high water, in a flood, where was the most running, rushing, down this side of this island, the north side of Island Number Four, or south side?

A. The south side, because the river made a bend in this way and the water rushed in right there.

Q. Was you here when the canal was built?
A. Yes, sir; I was living here.
Q. That was during what years?
A. I have forgotten, but I was here.
Q. Was you living over there when the canal was being dug?
A. Yes, sir.
Q. Was you ever over here on this side while they were digging the canal?
A. Yes, sir; occasionally.
Q. Did you see them at work on it?
A. Yes, sir.
Q. Do you know where they got the stone to build that outside wall with?
A. I don't know.
Q. Do you know whether they stood that wall out into the river or whether they stood it right close up to the bank?
A. I think they put it close to the bank.
327 Q. Who were the men who were bossing that job; that had charge of it for the Government; at the head of it?
A. Morgan L. Martin.
Q. Did there any one go up or did there not in the south channel with boats in those early years?
A. Yes, sir.
A. What kind of boats?
A. Durham boats.
Q. Was the water high enough at any stage for them to go up and down with Durham boats?
A. Yes, sir.
Q. How did they get them up and down the stream; how did they propell them?
A. All got in the water and pushed them along; had 18 or 20 men on a boat, and if the water was too low to pole them they would push them, and after they got to deep water they would pole them. I have seen them go up frequently.
Q. What did they carry?
A. They didn't go down full loaded; came up part loaded.
Q. What did they carry?
A. Merchandise.
Q. From where to where?
A. From Green Bay up into the country; Appleton, Oshkosh, Fond du Lac, and other places.

Cross-examination by Mr. HOOPER:

Q. Did the boats go all the time up the south channel?
A. Not always; occasionally; sometimes they did.
Q. Which channel did they go up most?
A. The south channel.
Q. Sometimes went up the north channel?
A. Very seldom. On account of the boulders they could not take the boats up there.

Q. Did they ever go up the north channel?

A. I could not say; I never saw them.

Q. Who used to run those boats?

A. M. Deroche, Alexander Cleremont, and afterwards Alexander Deroche.

Q. What part of the river run through that middle channel, do you think; one-half of it?

A. Yes, sir; I should think one-half of it.

Q. When the water was low was it one-half?

A. No; not quite, I suppose.

Q. When the water was high was it one-half?

A. Yes, sir; fully one-half. There was a great big fall right at the end of the island. There was more float-wood there than anywhere else.

Q. The water seemed to draw and draw float-wood through there?

A. Yes, sir.

Q. How nearly as much water went through north of Island Number 3 as went through the middle?

A. You mean the north cannel?

Q. How nearly as much went through the north as went through the middle; one-half as much?

A. I don't think so.

Q. One-third as much?

A. Yes, sir; about one-third as much.

Q. Up near the head of Island Number 4 which channel was deepest, the north channel or south channel?

328 A. Up at the mouth, of course, the north channel was the deepest.

Q. How far down river from the mouth was the north channel the deepest?

A. Three or four hundred feet.

Q. How much deeper was the north channel than the south channel up near the head of Island Number 4?

A. We did not go over there. I suppose there might be about the difference of a foot in going over; maybe a little over.

Q. You did not wade across that north channel up near the Island Number 4, did you?

A. Yes, sir; I have come from the main dam up to the head of that island.

Q. When the water was lot in the whole river which channel was the deepest, the north channel or the south channel, up near the head of Island Number 4?

A. That was a little the deepest.

Q. The north channel?

A. Yes, sir; at the head of the island.

Q. Which way from the head of the island did the most water run?

A. In high water there would be more come in that channel than that.

Q. More run north than south in high water?

A. Yes, sir.

Q. In low water which way would the most be?
A. I don't know that it made any difference.

By Mr. CARY:

Q. In answering Mr. Hooper's question you said more water run down through the middle channel. Did you mean that little channel there?
A. Yes, sir.
Q. Between those two islands there?
A. Yes, sir.
Q. Or down here?
A. I mean here. (Points between Islands 3 and 4.)
Q. Do you mean more water run down through that channel than the north channel?
A. No; not quite as much in that channel. This south channel gave more water than this channel.
Q. This little channel between these islands, there was not so much water in that as there was in the north channel or in this part, south channel, was there?
A. No.

Map offered in evidence.
Plaintiff objects on the ground that its correctness has not been shown.
Received and marked Exhibit 2.

JOHN STOVEKIN, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. When did you come to Kaukauna?
A. In 1866.
Q. Was there any dam across the mouth of the south channel at that time as there is now?
A. No, sir.
Q. What business did you engage in?
A. Flour mill here at Kaukauna.
329 Q. Shortly after '66?
A. Immediately when I came here I purchased a flouring mill.
Q. Where was that?
A. Right where the Kaukauna Water Power Company's mill is located.
Q. On the Government canal?
A. Yes, sir.
Q. How long have you lived here?
A. Since 1866.
Q. Did you engage in other business here after that time?
A. Yes, sir.
Q. What other?
A. I built a saw-mill here on Government canal, on lot 7, Jennie's plat.

Q. Are you and have you been since '66 acquainted with the flow of the river from the dam down?

A. As much as I have noticed.

Q. Have you ever crossed either of the channels either on foot or on horseback in those years?

A. Sometimes afterwards I crossed.

Q. After '66?

A. Yes, sir; after '66 I crossed the channels.

Q. Can you remember at what points you have ever crossed either of the channels?

A. Immediately after I came here I crossed the middle channel.

Q. At about what point?

A. At the head of the island; I don't remember exactly the number of it.

Q. This middle channel here?

A. I crossed from this point to this point—from Island Number 4 to the head of Island Number 3.

Q. Is there a bridge across there now?

A. Yes, sir.

Q. What season of the year was it?

A. I came here about the first of July, and that was some time in August.

Q. Did you cross above or below where the present bridge is?

A. I could not say that it was right from this point of the island right to the head of it, where the channel was widest. When you got down this way it was swiftest; you could not make footing.

Q. That would be just about across the mouth of the middle channel?

A. Yes, sir.

Q. What depth of water did you find?

A. We had to use a pole in order to hold ourselves and pole downstream.

Q. About how far up on you did the water come?

A. So far up as I could possibly walk in the water.

Q. How far up on your body?

A. Up to my thighs.

Q. Did you ever cross the south channel?

A. I have crossed it below here.

Q. Where?

A. Above Beaulieu's mill, in through here, across this island. I crossed it over in above these islands.

Q. Would that be a little downstream from the present Badger paper mill?

A. Yes, sir.

Q. How far down below the Badger mill?

A. Four or five hundred feet.

Q. What depth of water did you find in crossing there?

A. It was at a different period of the year.

Q. What period of the year?

330 A. It was immediately after the ice had gone out, in the spring.

Q. Was the water high or low?
A. Low that spring; the ice wore out.
Q. How deep did the water come up on you at that time?
A. Up to my knees.
Q. Ever see the water come over the Government dam in those early years as you came down to the head of Island Number 4?
A. Yes, sir; I have noticed it. I used to cross there quite frequently. There was a bridge; we used to cross on the bridge.
Q. What year was the bridge there?
A. It was here when I came.
Q. Was that where the present bridge is?
A. No; right above it.
Q. Right where it is now?
A. Yes, sir—that is, there is a filling in there. It was immediately at the head of the island.
Q. Was there any filling in at that time?
A. No, sir.
Q. Down which channel was the largest flow of water?
A. At that point it was at the north channel.
Q. How much more water was there than in the south channel?
A. It would be guess-work for me to give anything definite.
Q. What was the amount of the flow—considerable or small—down the south channel—large flow or small?
A. Well, there was quite a large flow, but not as much as the north channel.
Q. What proportion of water run down the south channel of the river, in your judgment, at that time?
A. About one-third when I first came here, in an ordinary stage.

Cross-examination by Mr. HOOPER:

Q. Which was the deeper, the north or the south channel, at the head of Island Number 4?
A. The north channel was the deepest.
Q. Which was the more rapid?
A. The north channel must have been the most rapid, from appearance.
Q. Do you think that it is a low stage of water in the Fox river when the ice goes out?
A. I have seen it low when the ice goes.
Q. Is it not ordinarily high when the ice goes?
A. Yes. That season I crossed through there to go to Beaulieu's mill I went through there with a prospecting view.
Q. Can you tell what year that was?
A. 1867.

Redirect examination by Mr. ORDWAY:

Q. Do you know, when you crossed from Island Number 4 to the head of Island Number 3, as you stated—do you know whether there had been any stone quarried out of the mouth of that channel before you crossed there?

A. I don't know anything about that. That was before I
331 knew of any work being done there.

Q. At the time you walked across there was there any dam across from Island Number 3 across to the north shore?

A. No, sir. I also crossed the north channel immediately behind the mill to that island from where the present tail race comes in from the Kaukauna paper mill on the Government canal.

Q. On foot?

A. Yes, sir.

Q. What year?

A. That was after I had built that paper mill. I built that paper mill in '73 and completed it in '74. It was either '75 or '76.

Q. You crossed on foot?

A. Yes, sir.

Q. What depth of water did you find in crossing there—across that north channel?

A. It was something about the same depth; there were two or three men with me. I went across to that island with a prospective view and sounded the channel.

Q. Did you cross the south channel on the same excursion?

A. No; it was later I crossed that.

Q. Do you know of there having been rock taken out of the south channel—out of the mouth of the south channel?

A. When the Government work commenced here they removed some rock. I don't know where they removed it or when; but in that middle channel there was some rock removed by the Government.

Q. Do you know of the removal of any other rock since that time from the mouth of or in the middle channel?

A. No; within the last 2 or 3 years there has been some rock removed there.

Q. By whom?

A. By these mills on the middle channel.

Q. Do you know whether there was any rock removed from there at the time the middle channel was improved in '80 or '81?

A. No; I could not say.

Q. Where did you live along in these years in '81 when they were improving the Meade & Edwards channel?

A. I lived in sight of it in Kaukauna.

Q. Do you know where they got the stone to make the retaining walls?

A. They quarried them out of the channel.

Q. Out of the middle channel?

A. Out where they were doing the work, as near as they could quarry them.

Q. How far out into the main channel did they quarry stone?

A. I could not say at to that exact spot.

Recross-examination by Mr. HOOPER:

Q. Are you connected in business with Mr. Vilas?

A. No, sir.

JOHN P. DIEDRICK, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

332 Q. What is your full name?
A. John Peter Diedrick.
Q. Where do you live now?
A. I live in the town of Kaukauna.
Q. Where did you live in '51, '52, '53, '54, '55, '56?
A. I lived here.
Q. How old was you when you came here?
A. 14 years old.
Q. What year was that?
A. '42.
Q. Have you lived here ever since?
A. Yes, sir; I have been off sometimes a year or a half, but I lived here; my residence was here.
Q. Did you see the Government canal when it was being dug and constructed here at Kaukauna?
A. Yes, sir.
Q. About what years?
A. I could not remember that. I was hired when they first commenced the work on it myself.
Q. How old was you when the canal was being constructed here?
A. 22 or 23 years old.
Q. How did they get the water out of the south channel, if they got it out, to build the retaining wall of the canal?
A. They had a coffer dam from this shore to the point of that island and turned it on the south-side channel.
Q. Which island did that coffer dam run to?
A. Right across here—the upper island, the large island.
Q. About how high up towards the Government dam did the foot of that coffer dam hit the north shore?
A. It was above the guard-lock; it was above that, so they went in behind that to build the guard-lock.
Q. By behind you mean downstream?
A. Yes, sir; downstream from the coffer dam.
Q. Tell us how they got the stone and where they got the stone to put in that retaining wall.
A. They took it out of the same river, and some was hauled out of the canal bottom where they were blasting and digging the canal.
Q. Whereabouts out of the river did they get the stone?
A. Below the coffer dams, on the outside wall towards the south side.
Q. How far downstream from the coffer dam—down towards the red mill of Smith—did they get stone?
A. They got them out all along there.
Q. Where was the retaining wall placed from the Government dam, as you come down the river towards and down to the red mill of A. L. Smith, with reference to the line of the shore? I mean how far out from the water line?

A. I think along in the center, probably 40 feet from the center, but down at the bridge it struck the shore and guard-lock; that was on the shore there was kind of a bend in the river; they set the
333 wall into the river.

Q. How did they construct the wall; how did they build it; how did they do the work; after they got the wall what did they do next?

A. As fast as they made the wall they filled in; made their embankment; there was the hole in the river; they filled that in.

Q. Where did they get the dirt? In digging the canal you say they filled in against the wall?

A. Yes, sir.

Q. Where did the dirt come from?

A. Where the bridge is.

Q. Didn't they dig it out of the canal?

A. Not where the river was deep.

Q. In filling against the wall, they dug out the canal?

A. Yes, sir; but they dug out below here.

Q. Was there any considerable part of the canal, as it now lies, dirt dug out of the edge of the river bank?

A. Some, but down here on the bend; but up here there was not much taken out.

Q. Where the wall stood out furtherest into the river there was not much taken out?

A. No.

Q. But along down the bend they did dig the dirt out?

A. Yes, sir; and up at the guard-lock.

Q. What is your recollection as to whether there were any stone quarried out of the bed of the river outside of the original wall to put into the retaining wall?

A. They took out a good deal of stone; they had a wing dam above to keep it dry, and hauled lots of stone out of the river to build the wall; some was hauled out of the quarry on the flats.

Q. Ever cross these channels before there were any dams built?

A. No; not in the rapids. I crossed above many times, but not in the rapids.

Q. What do you mean by above?

A. Up about my father's place, above the dam.

Q. Did you ever cross the mouth of the south channel from the head of this big island over on the other side?

A. Yes; but not right here; here below I have crossed.

Q. What do you mean by right up there?

A. I mean the location I used to go over on Beaulieu's island when I was a boy and crossed the streams. I don't remember of crossing up at the pond.

Q. I call your attention to the map which we have called Exhibit 2. This — upstream and this is supposed to be the Government dam; up there it is marked United States dam on the map; you spoke of the head of this big island; right over here is marked in red ink "Bridge;" that is the bridge over to the south side where it is now about; I show you on this map marked in pencil Grig-

non's old mill; that is right where Patton's bulkhead is now,
334 and right across the whole piece is marked a square with "B" in pencil to represent somewhere near where Beaulieu's place is, and marked on that map is Meade & Edwards' water power; that represents the middle channel where it was and is. I ask you this, where you went across, if any of those channels, in early times.

A. I went across here.

Q. You mean in the vicinity of Beaulieu's house or nearer to the Badger mill?

A. It is further down, between the two places.

Q. Between Beaulieu's house and the Badger paper mill?

A. Yes, sir.

Q. Across onto what, the big island?

A. Yes, sir; about at the foot of this island; just above the outlet of the slaughter-house channel.

Q. There is a point marked "Slaughter-house"?

A. Yes, sir.

Q. Do you remember where the building was?

A. Yes, sir.

Q. Was that about where you crossed?

A. Yes, sir.

Q. Where did you cross the middle channel in going across on this side over on Island Number 3, crossing the middle channel? Have you crossed the middle channel?

A. Yes, sir.

Q. About how far up or down from its mouth, or how far up from its lower end?

A. I have crossed about here where this old mill stands now.

Q. Where it is now marked Grignon's mill in pencil?

A. Yes; I have been across there several times; when Gus Grignon and I were little boys we used to cross there.

Q. Did you ever cross Island Number 3, north channel, over to the vicinity of where the old Grignon mill was?

A. Yes, sir; just below that.

Q. About what is the width of the middle channel compared with the south channel and north channel; was it a wide channel, the middle channel, or was it narrow?

A. It was not so wide as the south or north channel; it was a narrow channel.

Q. Do you know whether drift-wood got in that middle channel?

A. It never got so it blocked all up; once in a while a log or tree would get in, but never to form a dam.

Q. Not so but what it would be swept out with the flood?

A. No.

Q. Did you ever know of drift-wood being lodged in the south or north channel?

A. No.

Q. What amount or proportion or part of the whole water of the Fox river as it came down from above, in your judgment, went down the south channel?

A. As near as I can judge, before there was any dam or anything, probably one-third went in the south channel and the other two shares on this side, as near as I can remember; according to my judgment.

335 Q. On this side of Island Number 4?

A. On this side, south channel, probably one-third.

Q. And the balance run on this side of the big island?

A. Yes, sir.

Q. What depth of water did you find in crossing from the south side, as you have stated, over on to the big island?

A. I don't remember; there were some shallow places and some deep.

Q. Rock bottom?

A. Yes, sir.

Q. Can you remember anything about the depth of water you found in this middle channel when you crossed over; how high up on you, if any, did it come?

A. It did not come very high when I crossed; not over two feet; sometimes there might be a hole that was deeper and some other places shallow.

Q. How was it in this north channel in crossing from Island Number 3 to over near the Grignon mill; how was the water?

A. Some places over two feet. I had to take a pole to brace myself to get over.

Q. Were there freshets in different periods in the Fox river at this time?

A. Yes, sir.

Q. When were the freshets usually?

A. In the spring when the snow went off.

Q. Tell us about what the rush of water was down here in time of freshet; describe a time of high water; how it used to run down the stream from up near the Government dam, as to how it looked when it run down.

A. I have seen the freshet very high; a large body of water went down.

Q. Whether it ran quietly and still or whether it ran with a rush or how much rush.

A. It ran high, swift, when we had high water.

Q. Do you remember any time of very high water, tremendous flood?

A. Yes, sir; I can remember that. I remember one year, in June, we had a fearful storm; that is the highest I ever saw it; the river rose in one night about two feet.

Q. What was the effect on the bottom of the river in those times of flood; sweep everything out clear or leave it?

A. It cleared the channel out. A good deal of timber and logs came down, and wherever they would strike a tree they would get hooked, and then they would be washed out again.

Q. Are you speaking of this before any improvements?

A. Yes, sir; before any dams were in the river.

Q. Did you ever see any boats of any kind there, Durham boats or large canoes, passing up or down any of these channels?

A. Yes, sir; I saw some of these Durham boats going up and down.

Q. You have seen them?

A. Yes, sir.

Q. Did you ever see any of these boats passing either up or
336 down the north channel? I mean all the way up and down.

A. Yes, sir; that is where they went, on this north channel.

Q. How far down did they go on this north channel?

A. These big boats went clear through. I have seen bark canoes go as far as the bridge and then take them out and carry them.

Q. Where was the upper landing?

A. Where the bridge stands.

Q. The lower landing?

A. Down on the flat.

Q. Down by the sulphur springs?

A. All down.

Q. Where was the lower end of the portage?

A. They would take it out down at the sulphur springs. They had a warehouse there. They could run the boats a little further up; up to the Government canal.

Q. Did you ever do any work carrying boats over the portage?

A. When I lived with Lawe I took a trapper and canoe down and some of his stuff.

Q. Did you ever see any boats go up or down the south channel?

A. It seems to me there was a boat went down on the south side once. I did not see it myself, but I know there was one went up.

Q. Did you see any canoes go up or down?

A. No; not much, of any. They were all on this side.

Q. You lived on this north side?

A. Yes, sir.

Q. Were you over here most of the time?

A. Yes, sir; we lived up here on the hill on the north side.

Q. Do you know who did the bossing of—who was or appeared in charge of the works here at that time in the putting in of the canal?

A. There were different ones. Theodore Conkey had charge some and Henry Hewitt and Elliot; different parties.

Q. Who was bossing the whole business?

A. The company—Morgan L. Martin and Theodore Conkey.

Q. You remember these men?

A. Yes, sir.

Q. Which channel was the water the swiftest in in a stage of very high water—flood-water?

A. It was swiftest on the north side. The biggest part of it run down on the north side?

Q. Was that so also in the ordinary stage of water? Which was the swiftest in the ordinary stage of water?

A. In the north channel it was always the swiftest; there was naturally more fall to it than on the south side.

H. A. FRAMBACH, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. Where do you live?
A. Kaukauna.
Q. When did you first come here?
A. In 1873—that is, I first came here to reside in '73. I first visited here 2 or 3 weeks in 1865.
Q. What business are you now engaged in?
337 A. Manufacturing.
Q. You lived here ever since?
A. Yes, sir; with the exception of two years I was in Menasha—'78 and '79.
Q. Have you been familiar with the Fox river and its flow ever since you have been here?
A. Quite so.
Q. Was you one of the builders of and interested in the Badger paper mill on the Government dam, then called the Frambach mill?
A. Then called the Stovekin mill; I was interested.
Q. I mean this mill.
A. Yes, sir; my brother built that mill in 1873, when I came here to reside.
Q. That mill has been reconstructed—rebuilt—since that time under another name?
A. Yes, sir.
Q. It was the Frambach Paper Company.
A. Yes, sir.
Q. That mill is now owned by the Kaukauna Paper Company?
A. Yes, sir.
Q. Which mill are you now conducting or interested in the conduct of?
A. The Badger Paper Company.
Q. This side?
A. The south side.
Q. Located with reference to the Kaukauna Water Power Company's canal at what point?
A. The lower end of the canal.
Q. Do you know where the temporary dam is located, starting at the upper end of Island Number 4 and extending up to or near to the south end of the Government dam?
A. Yes, sir.
Q. Was there a dam of that kind in there when you first knew the channel?
A. No.
Q. Do you remember who put that dam in?

A. It was ordered in, I think, by the Kaukauna Water Power Company.

Q. People on that side?

A. Yes, sir.

Q. Do you remember the channel and appearance of it from the river down to the head of Island Number 4 before that dam was put in? I speak of the whole channel—of the whole river.

A. Yes, sir; I remember it there; I observed it.

Q. Will you try and tell us about *about* when, as near as you can remember, that first temporary dam was put in there?

A. I think it was in 1881. You have no reference to the dam running across the head of the south channel?

Q. Yes, sir.

A. I think it was put in in 1881.

Q. Have you noticed and had occasion to notice the flow of the river at that point from that time down to the present?

A. Yes, sir—that is, so long as the natural flow of the river was permitted to go through there.

Q. Have you witnessed the river at times of very high water?

A. Yes, sir

—. Have you known it as well at the ordinary water, and did you ever know it and notice it at times of very low water?

A. Yes, sir; we were especially interested on account of
338 our head, etc., and the way that I specially noticed the flow in the south channel was this bridge oftentimes was in very poor condition, and sometimes we were forced to drive our straw teams when we were getting across to our mill on the south side. We had to cross above the bridge and drive our teams through there.

Q. That is, at the point on the map marked Exhibit 2—at the point marked in red ink "Bridge"—you crossed above the bridge?

A. Yes, sir.

Q. What depth of water did you find there, about?

A. In low water it would come up to the side of the horses, or, in other words, the whiffletrees of our wagon would strike; it would flow over the top of my buckboard.

Q. What season or seasons is the water ordinarily high or highest here?

A. In the spring months.

Q. So-called spring freshets here?

A. Yes, sir. We don't have freshets here; there is a gradual rise, and the water gets the highest in the spring of the year.

Q. Are you acquainted with the dams across the outlet of Lake Winnebago at Menasha and Neenah?

A. Yes, sir.

Q. Was the stage of water in that lake—does it restrain or in any way effect or qualify the word freshet as I use it here on the river below?

A. No, sir; not in the extreme high-water stages.

Q. When the water comes up on these dams?

A. After the water comes up so it flows over the dams we gener-

ally have the natural water that comes from Lake Winnebago. Of course, the higher the water the more comes from the lake.

Q. Do you know whether the water is up at the present time, up to the top of these dams?

A. No, sir.

Q. Is it up to the top?

A. No, sir.

Q. Is it true that all the water that comes to Kaukauna is substantially all the water that comes through the wheels at Neenah and Menasha?

A. Yes, sir; barring leakage.

Q. If they shut the wheels and keep them shut entirely, there would be no water here at Kaukauna?

A. Except what leaks through their dams and their wheels.

Q. In time of high water—in freshets, as I have explained—what was the appearance of the flow of the river above the head of Island Number 4 and as it came down and divided at the head of Island Number 4 in the two channels—the north and south channel-? Describe the rush of water.

A. Of course, there was quite a rush of water from the dam here. Coming down to the head of Island Number 4, there is less fall from the dam to this head of the island than there is after
339 we pass the point below here; the water seems to be equally divided from the south side to the retaining wall of the Government canal.

Q. What is the appearance—I am speaking of extreme high water—what is the appearance of the water, then, after it divides at the head of Island Number 4 in going down the south channel, whether it went with a sweeping rush, taking everything with it, or whether it went mildly?

A. It had about the same appearance in both channels so far as the rush of water went until we got to the point below the old sawmill, around the turn here there is a heavy fall; here is the turn in here; here is the line of private claim number one, right in this point here; there we have a pretty heavy fall there.

Q. From the point which is marked in pencil mark "Grignon's mill," that is the line you speak of, private claim number one, from that point what is it up there?

A. From over against what is marked on the map Exhibit 2 as waste-weir channel, the channels had about the same appearance running on the south side and north side, so far as the swiftness of the water appeared, to the point opposite this waste-weir channel, about that point, from where, of course, there is considerable fall in the north channel below that.

Q. A more rapid fall in the north channel from that below than above?

A. Yes, sir.

Q. About how far down on the south channel did the same appearance of swiftness continue?

A. I think the natural fall of the south channel is about uniformly all the way down. I don't remember of any particularly

low place that would cause additional velocity of the water; I think it is equally divided and passes in among those islands equally in high water all along down through that channel.

Q. What was the comparative width and size of the middle channel before it was improved compared with the south channel and north channel—I am speaking of the size and width of it before it was improved?

A. That I don't remember; I could not be definite enough as to the number of feet, because I never measured.

Q. Was you ever interested in any works on the middle channel?

A. Yes, sir.

Q. In the Union Pulp Company, *Q.* did you become interested in that before the middle channel was improved or after?

A. After it was improved.

Did you see the improvements being made in the middle channel?

A. Yes, sir.

340 Q. How were the retaining walls of this channel made?

A. They were made with rock.

Q. Where did the rock come from?

A. Dug out of the channel.

Q. The middle channel?

A. Yes, sir.

Q. Was the middle channel widened in making the improvement?

A. At the head-gates?

Q. No, sir; anywhere.

A. It is formed into a pocket there; there were two channels; there was a little island and they took that island in. There were two or three channels through there, if I remember correctly; they made the pocket wider and came together there and put the retaining wall up where the mills are.

Q. Made a pond in there?

A. Yes, sir.

Q. Did that substantially widen the middle channel, give it more capacity?

A. No, sir; I don't think they interfered with the inlet of the channel. I don't think that was interfered with further than putting up stone abutments to get their head-gates.

Q. You don't know what the comparative width and size of that channel originally was compared with the other two, do you?

A. No, sir.

Q. You built the Union pulp mill?

A. Yes, sir.

Q. About what proportion of the whole Fox before that temporary dam was put across from the head of Island Number 4 up to the Government dam passed down the south channel?

A. I cannot answer that question further than general observation. My impression has always been that about one-third of the water went down the north side.

Q. How much and what kind of experience have you had since you have been in Kaukauna in the way of applying water power of the Fox river and ascertaining the power on it and different sides of it?

A. No further than——

Q. State what improvements you have made and what you have done and what you know about it.

A. I assisted my brother in building what is known as the Eagle mill on the Government water power. I built the Union pulp mills, made the plans and superintended its construction, operated it for some little time. I superintended the building of the Badger mill on the south side. I have worked on the middle channel considerable, cleaning ice and cleaning out its channel in order to improve it for manufacturing purposes; in other words, I have been on the river constantly interested in its water power and have observed it from time to time for my personal benefit.

Q. Are you a mechanic of any kind?

A. I claim to know something about manufacturing paper.

Q. Have you constructed any kinds of machinery for the
341 manufacture of pulp and paper?

A. Yes; I have inventions in that direction, my own patents.

Q. In use now?

A. Some of them in use.

Q. For what purpose?

A. My principal patent is what is known as the Frambach pulp-grinder; that is in general use.

Cross-examination by Mr. HOOPER:

Q. Interested now in the Union Pulp Company?

A. No, sir.

Q. About what time did your interest in that cease?

A. 1883, I believe.

Q. You spoke of being in the habit of driving across the south channel near the head of Island Number Four on account of the condition of the bridge?

A. Yes, sir.

Q. Would it have been practical for you to drive across the north channel at the same time near the head of Island Number Four?

A. I think not. I think the unevenness of the rock would have prevented it. I think, also, the depth of water would have prevented it near the Government canal, although I have driven across down below the mill here.

Q. Below Smith's mill?

A. Below the Eagle mill. I drove across the north channel there and found a little more water and uneven rock than we had on the south channel.

Q. Don't you think that in an ordinary stage of water the water was more rapid in the north channel than in the south channel near the head of Island Number 4, where it entered these channels?

A. I think not; not so far as I could observe. It might have been near the canal over at the other bank, but not at the head of the island.

Q. Down 400 feet from the head of the island?

A. Near the Government dam I think it run a little swifter. I think it was deeper near the retaining wall than it was on this side, because it is deeper now.

Q. Above the head of Island Number 4 you think it run swifter on the north side than on the south side?

A. I think the water was about equal so far as the division of water was concerned. I say it may have been swifter next to the retaining wall. I noticed here above what is known as the Smith mill the water is swift—the north channel—on account of its depth.

Q. From the mouths of the channels, which do you think runs or flows the faster, the north or south channel, say 400 feet, from the head down 400 feet?

342 A. I don't think there was much difference in the fall of the rock. Of course, I have never taken a survey. It is from my general observation. I don't think there was much fall. I think the equal distance to the Badger paper mill—I think the fall is greater at the Badger paper mill than it is on the same distance from the Government dam than it is on the north side.

Q. Down the same distance?

A. Yes, sir; I think that is the fact from the water level.

Q. If it is not the fact, but, on the contrary, the fall is greater in the north channel, that would give a swifter flow in the north channel?

A. Yes, sir.

HENRY HAMMEN, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. How old are you?

A. 70 years old.

Q. Where do you live?

A. Little Chute.

Q. How long have you lived in this vicinity?

A. 40 years.

Q. What year did you come here?

A. The last of '49 I came.

Q. Have you lived here ever since?

A. I was off a year and a half.

Q. What time?

A. I was off in 1853 in the Lake Superior country, and I returned here in 1854 or '53.

Q. Do you know of the building of this canal here?

A. Yes, sir.

Q. Did you work on it?

A. Yes, sir; I worked about four years on it.

Q. What kind of work did you do on the canal?

A. I drove a team.
Q. What kind of work was the team doing?
A. Ploughing, scraping, and everything that could be done; drawing stone.
Q. Who did you work for?
A. Henry Hewitt—the old man.
Q. How did they get the water out of the north channel, so as to put in the canal?
A. They put in a coffer dam.
Q. From where?
A. From the shore to the bottom lands.
Q. And where did the other end of the coffer dam extend to?
A. Up where Driessen lives, on the hill.
Q. Toward the north end of the present Government dam?
A. Yes, sir.
Q. About how far in the stream, if at all, out from the bank of the river was that retaining wall set?
A. On the west side it was pretty close to the shore. We had to dig the canal in the middle of it here. There was hardly anything dug out on the east side; they had to dig again.
Q. You mean by the east side near the bend?
A. Yes, sir.
Q. You mean by the west side up near the guard-lock?
A. Yes, sir.
Q. Was there a projection of hard ground out from the land out into the river there near the guard-lock?
A. Yes; there was a hill.
343 Q. What amount of digging into that hill did they have to do there—large or small amount?
A. A large amount; two gangs of teams in it.
Q. Then from about where the end of the Government dam is now down this way until you get down pretty near to the red mill there was not much, of any, digging?
A. No; that between the guard-lock and bend did not have to be dug and that in the middle.
Q. How close to the bank of the stream was the wall when you got down at the turn right by the red mill, about?
A. I think it was pretty straight in the middle place, and then it turned right off in the river.
Q. By the mill?
A. Yes, sir.
Q. Was the most of the canal dug into the hill at that point, at the turn?
A. Yes, sir; it had all to be dug.
Q. Where did they get the stone for the building of that retaining wall?
A. When they first begun they got it below the coffer dam; they got all the stone out of the river they could take, and I went away, and when I came back it was six feet high, and they had to draw them off of Grignon's flats.
Q. How long was you gone?

A. A year.

Q. When was the wall commenced?

A. In '51, I guess.

Q. How long did you work on it before you went off?

A. One year I went around there, and I went off and came back and commenced work there again.

Q. Did you work then until the wall and canal were commenced?

A. Yes, sir; Allen had the contract, and he cleared out, and Hewitt had to fix it.

Q. When you came back did you work for Hewitt?

A. Yes, sir.

Q. How much did you get a month?

A. One year I worked for $11 a month from four o'clock to 10, and the next year he gave me $12 a month, and I went off to Lake Superior and I got $60 a month, and I came and told him I could work for that, and he gave me $25 a month.

Q. How far up and down this north channel did they take out stone out of the north channel to put into this wall?

A. We took it from the coffer dam to the island wherever we could get it.

Q. How far downstream?

A. To where this red mill of A. L. Smith is.

Q. Had there any stone you know of been taken from anywhere to build the bottom of that wall six feet high up to the time you left except what was got along the river?

A. At the time I was here it was started, and that year they did not do a great deal; the way it looks they took them out around there; it was broken; I did not see any of the breaking; that
344 was when I was there; next we drew them off of Grignon's flats.

Q. Before you went away and while you worked here was there any stone taken from anywhere else except out of the river?

A. No.

Q. About how high was the wall when you went away?

A. Not over 3 feet.

Q. How wide was that wall at the bottom?

A. I have forgotten.

Q. Was it a wide wall or a narrow wall?

A. Pretty wide.

Q. Did you ever go across the south channel from the big island over to the south side in those times?

A. No; not when I was a boy; I did not travel much.

Q. You don't remember?

A. No.

Cross-examination by Mr. HOOPER:

Q. How long was that coffer dam in?

A. It was in, anyway, the time I was working there 3 or 4 months, the time we were picking out stone; the dam was in there to get out stone.

Q. Didn't remain in there a year?
A. I have forgotten about it; I know the dam was there at the time we took the stone.
Q. How far out into the river did that wall set at the farthe*rest*—that is, where it run out the farthe*rest* into the river, how far was it from the shore line, from the outside wall?
A. Just as wide as the canal is.
Q. The middle thread of the canal would be about the shore line?
A. Yes, sir.

ALEXANDER GRIGNON, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

Q. Where do you live?
A. I live in the town of Kaukauna. I have been living there since the county was organized; I have lived here about 50 years.
Q. How old are you?
A. 56 years next August.
Q. Was you here at the time the canal was dug?
A. Yes, sir.
Q. Did you work upon it?
A. Yes, sir.
Q. What kind of work did you do?
A. I drove team most of the time.
Q. How old was you?
A. 17 or 18 years old.
Q. How did they get the water out of the north channel so as to put in the canal wall?
A. With the coffer dams.
Q. Where did it run from?
A. They began to put the wall in below here, in the bend; they followed along, and they put two or three coffer dams in; the main coffer dam was out here at the guard-lock across to the south channel.
Q. Across to Island Number 4?
A. Yes, sir; I believe it is the biggest island there.
Q. How long did that coffer dam remain across the head there?
A. It remained there the whole summer.
345 Q. What did they put that dam across there for?
A. To raise the water.
Q. The coffer dam?
A. To throw the water on the other side in order to build their wall.
Q. Did you work helping to build the wall?
A. No, sir.
Q. What was you doing?
A. I was driving team to get out dirt to fill up here.
Q. Doing excavating?
A. Yes, sir.

Q. In the same canal?

A. Yes, sir.

Q. Where did they get the stone to build the retaining wall during the time that coffer dam was in?

A. The foundation was built from the stone they got out of the canal and outside the canal—outside the wall.

Q. Both sides of the wall?

A. Yes, sir; until they had it all cleaned out, and they got it from below.

Q. Can you tell us about how wide that wall was at the bottom?

A. I think between 10 and 12 feet. I think that is the width of the bottom.

Q. How far up and down the river from the shore end of that coffer dam, which would be somewhere about the guard-lock—how far from there down the river towards the Government canal did they take out stone out of the river outside of the retaining wall?

A. I think they took the stone pretty near down to where the mill is now.

Q. The whole distance?

A. Yes, sir.

Q. Can you tell us about how far out from the bank of the river that retaining wall was put into the river, if at all?

A. I think just about half way—that the center was the high land then.

Q. About half the width of the canal out into the river?

A. Yes, sir.

Q. How was it at the bend—the same way?

A. No, sir; it run into the land there.

Q. Have you ever been across these channels of the river from this side—North Kaukauna to South Kaukauna—before any dam was put in?

A. Yes, sir.

Q. Did you ever do it on foot?

A. Yes, sir.

Q. Did you do it many times or only once?

A. I did it many times.

Q. Where was the deepest water in all the channels as you crossed?

A. The north channel?

Q. How much water was there in that middle channel compared with the south channel—the middle channel—the Meade & Edwards channel? In the state of nature which was the largest between the south and this middle channel?

A. The water was deeper in this middle channel.

Q. Which was the widest?

A. The south channel was the widest.

Q. Did you ever cross up near the Island Number 4, south channel?

A. Yes, sir.

346 Q. Did you ever cross the north channel before there was any dam built up in the same neighborhood, at the head of the island—I mean further up near the head of the island?

A. No, sir; that is not where the water was the highest. No; I crossed it when the coffer dam was put there?

Q. Did you ever see the water when it was very high in the river here?

A. Yes, sir.

Q. Ever see it when it was very low?

A. Yes, sir.

Q. What season of the year was it the highest?

A. In the spring—April and May.

Q. Down which channel went the most water in a flood time—the south channel or the north channel, when it was away up?

A. The north channel was always the highest, of course.

Q. How much difference between those two at the head of Island Number 4?

A. I never measured that.

Q. What do you think?

A. There must have been a couple of feet difference.

Q. What part went down the south channel and what part the north channel—which was the heaviest part?

A. The north channel.

Q. How much the heaviest?

A. That I could not tell; I never took enough notice of it.

Q. In high water did it come down the south channel with a big rush?

A. Yes, sir.

Q. Also down the north channel?

A. Yes, sir.

Q. How about the middle channel?

A. The middle channel was a pretty rough one—too rough for anybody to go there with a boat or canoe in high water.

Q. In low water?

A. I never saw anybody travel through there with boats or canoe in low water.

Q. Did you ever go across that middle channel and not get wet in low water?

A. I don't remember.

Q. Were there any parts of that middle channel in the very lowest water when you could get across it on the stones that stuck out of the water without getting wet?

A. I never saw it.

Q. Not at any part of it?

A. No.

Q. Did you ever go up or down the south channel over by the Badger mill in a canoe or boat?

A. No, sir.

Q. Did you ever go up and down the north channel?

A. Yes, sir.

Q. Where was the sharpest flow?

A. On this side, on the north channel.

Q. Where was the sharpest flow in this north channel?

A. Right by where the old grist-mill used to be.

Q. The Grignon mill?
A. Yes, sir.
Q. It was there, was it, when the water flooded down?
A. Yes, sir.
Q. Was there any part of the old Grignon dam left there?
A. No, sir; nothing left.
Q. But the swiftness is occasioned by the fall of the rocks?
A. Yes, sir.

347 Q. Is that the reason they carried the goods around the portage?
A. Yes, sir.
Q. Did you ever see any goods come up and down the south channel in boats?
A. In the spring I have seen it.

Cross-examination by Mr. HOOPER:

Q. Which carried the most water in the ordinary stage of water, the middle channel or the south channel?
A. The middle channel.

Redirect examination by Mr. ORDWAY:

Q. You mean this channel here? There was more water in there than in the south channel?
A. Yes, sir. You mean that channel where the Union mill is built on. That is the one I mean.

348 At my office, in the city of Appleton, on March 10th, 1890, the following testimony was taken, the attorney present as before stated:

Plaintiff produced notice of hearing, with proof of the service of the same on Breese J. Stevens, attorney for the Green Bay & Mississippi Canal Company; Winkler, Flanders, Bottom, Smith & Vilas, attorneys for the Chicago & Northwestern Railway Company; Alfred L. Cary and David S. Ordway, attorneys for the different defendants represented by them; P. R. Barnes, attorney for the Reese Pulp Company, and David S. Ordway and Alfred L. Cary appearing in person for the defendants represented by them; Moses Hooper appearing for the plaintiff and also for the defendant Green Bay & Miss. Canal Co. in reference to the division of the water and the partition of the same between the channels, and also for Charles Fairchild, the other defendants not appearing.

Plaintiffs proceed to produce their testimony and call as a witness PETER REUTER, who, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?
A. Kaukauna, Wisconsin.
Q. How long have you lived there?
A. I moved to Kaukauna in 1869, in March, about 21 years ago.

Q. What business have you been engaged in at Kaukauna?

A. I was in the manufacturing business until here four years ago on the water power, manufacturing wagon stock, hubs, and spokes.

Q. Have you been acquainted since 1869 in a general way with the flow of the river past the islands in what is now the city of Kaukauna?

A. Yes, sir.

Q. At the time you first knew of the river at that point was there any dam at that point?

A. Yes, sir; there was an old dam; what we called the old dam was in there.

Q. The dam that was built by whom?

A. I suppose it was built by the Green Bay & Miss. Canal Co., or the Fox River & Wis. Improvement Company.

Q. Was that the dam that is now there called the Government dam?

A. No, sir.

Q. How was it situated with reference to the Government dam?

A. It was a little ways above the Government dam.

Q. Do you know whether that dam was of the same height entirely across the river?

349 A. No; it — not as high as this one—that is, it would not hold water as high as this one; some of the spars stuck up, but it would not hold as high as a general thing as high as the Government dam.

Q. Was this first dam that you knew when you were there of the same height throughout its whole length across the river?

A. I do not know as I understand that question; was it at the same height at one end as at the other?

Q. Yes, sir.

A. No, sir; not to my recollection.

Q. Which end was the lower?

A. The south end was the lowest—that is, what we call the south end it was the southerly end. It is on the south channel of the river, the southerly end.

Q. How much deeper did the water flow over that end than it flowed over the north end when there was water enough going over to cover the whole dam?

A. I should think, as near as I can recollect, from 10 to 15 inches.

Q. At that time in 1869 how much water was drawn through the Government canal, as near as you can state?

A. Those years they generally had a good head of water in the canal; the old dam was in pretty fair shape and generally had a fair stage of water in the Government dam, drawn through the canal from the mills, if you have reference to that.

Q. Yes.

A. When I first came there.

By Mr. ORDWAY:

Ques. Before you bought?

A. Yes, sir; that was the old flour mill of Cord & Gray; I think

they had a one-hundred-horse power there, I think it was, and there was the old Stovekin mill; it is there now; the saw-mill, they had 75-horse power in there at that time, I think; that was all, I think.

Q. What heads did they run on, about?

A. The saw-mill below them calculated to run on from 12 to 14 feet head; that is the way they had their wheel set; the wheels were not down in those days.

Q. The other mills?

A. The other mills, I was not much acquainted with them. I don't know exactly where there wheels set.

Q. About the same, probably?

A. Not quite so much; their wheels set up high; in the ground there is a natural decline, perhaps from 10 to 12 feet; I don't know exactly where their wheel set.

Q. Were there not times when these mills were not running at all?

A. No, sir; there was plenty of water in those days.

Q. Were there times when they did not run?

A. Yes, sir.

Q. They did not run Sundays?

A. No, sir.

350 Q. Was very much water being used then to carry boats through the canal?

A. Well, there was not very much boating done in those days; there was water in the fall of the year; they run boats in the fall, but along in the summer time there was not much boating. There were two boats running on the river in those days, that was about all, the old Brooklyn and Winnebago.

Q. How soon after you went there did you start to run a mill?

A. As soon as I moved there we went to work right off to build a mill. I moved there in March, and we started up in July. We put up a flume and started to run in July, 1869.

Q. Have you in all these years been familiar with the ground and channels where the water divides and passes the islands?

A. I was, in a general way.

Q. How, in your opinion, did the water divide as it flowed when not obstructed below the Fox & Wisconsin River Improvement Co. dam, between the south and middle and north channels?

A. South, middle, and north channels, according to my judgment, my best judgment, there was a good deal more water went through the north channel than the two others.

Q. How did the water going through the south channel above the middle channel and the middle channel compare in volume?

A. The middle channel and the south channel?

Q. Yes.

A. According to my judgment there is twice the amount of water going through the middle channel than through the south channel.

Q. What works are now on the middle channel?

A. The Union Pulp, Reese Pulp Co., and the Fox River pulp mill, I believe they call it.

Q. Does this division which you have spoken of depend on any dams or interference to turn the water into one channel and another below, or is that, in your opinion, what would be the natural channel of the water?

A. No; there are dams on the river. There was no interference there those days; that was the natural flow of the river as it stood then, without any dams or interference. Of course, there was the old dam in the main river—there was the dam there, but not interfering with the division of the channels.

Cross-examination.

By Mr. ORDWAY:

Q. How many horse-power did you start your mill with in 1869?

A. A fifty-horse-power wheel.

Q. How much did you have on lot nine *one?*

A. Fifty-horse power.

Q. What proportion of it did you draw and use that first year?

A. We drew the first year probably 20 or 25 horse power.

351 Q. How long after that did you draw any more?

A. About three years afterwards, when we began to draw all we had, in 1872.

Q. Then you commenced to use the rest?

A. Yes, sir.

Q. Used about half on the start?

A. Yes, sir.

Q. Up to 1872?

A. Yes, sir.

Q. What was the business you was doing?

A. Manufacturing spokes and wagon stock.

Q. How much head did you use those wheels under?

A. Ours from 12 to 14 feet.

Q. Yours was the farthest down the stream of any of them then in use?

A. Yes, sir.

Q. Which side of the river did you live on?

A. On the north side.

Q. Did you ever cross the north channel on foot?

A. No, sir; only over the bridge.

Q. Did you ever cross onto Island Three on foot?

A. No, sir.

Q. Did you ever cross the middle channel on foot?

A. I did at one time.

Q. What time?

A. I think it was in 1871 there was a part of a foot bridge; they had planks placed on edge; we had to wade through the water.

Q. You crossed the middle channel?

A. Yes, sir.

Q. How did you cross the north channel?

A. Over the bridge.

Q. Was there, then, a bridge from the north bank of the river onto Island Three?

A. Yes, sir; on Island Four, not on Island Three; I don't remember now; Island 4 is where the bridge leads, not on Island Three.

Q. Right opposite your mill?

A. That is Island 3.

Q. Did you ever cross that north channel on foot from your side over to Island Number 3?

A. No.

Q. Did you ever cross the middle channel on foot?

A. From Island 4 to 3?

Q. No; from Island 3 to Island 4.

A. Coming from Island 4 to Island 3?

Q. Yes; either way.

A. I went across there at one time.

Q. About when was that?

A. I think it was in 1871; I would not be positive.

Q. Was you on foot or horseback?

A. On foot.

Q. About how far from the mouth of the channel did you cross it?

A. As near as I can remember, it was below the spot where now stands the Union pulp mill, where that dam is.

Q. Pretty near the lower end of Island Number 3?

A. Yes, sir; somewhere there.

Q. Was not the middle channel at that point divided into *to* 2 or 3 channels?

A. Not where I crossed.

Q. Did you cross then pretty near where the dam now stands, across the middle channel?

A. Somewhere there, I can't exactly say; it was just there, a little below or above, somewhere in that vicinity.

Q. What time of the year was it?

A. That I cannot say.

352 Q. Was it in the winter?

A. No. It was either in the spring or in the fall.

Q. What time was the highest water there?

A. Always in the spring of the year.

Q. You crossed in the spring of the year?

A. I think it was in the fall of the year. I would not be positive, but I think it was along in the fall.

Q. Do you remember what you crossed for, what your business was?

A. Yes, sir.

Q. What?

A. I went over to look after some timber.

Q. On Island 3?

A. Yes, sir.

Q. Island 4 is the island fartherest upstream?

A. The largest, biggest island, where the bridge leads on, and the other one is Number 3.

Q. How wide was the middle channel where you crossed it at that time for that purpose?

A. I don't know exactly how wide it was; I could not say exactly. As I said, I presume there was water flowing there and flowing pretty swift.

Q. How wide was it; how far across?

A. I should think somewhere from 40 to 50 feet; maybe not so wide; somewheres about there.

Q. Do you recollect how high up on your body the water came?

A. Where the water was swift and where the water was deepest there was a kind of temporary bridge across. I don't know how deep it was. They were working and we went above where the bridge was in. I know it went into the top of my boots.

Q. What kind of boots did you have on?

A. Ordinary top boots.

Q. Halfway from your ankles to your knees?

A. My boots came up so high that the water went up to my knees and above that.

Q. You think there was a part of a bridge across there?

A. I know there was; kind of a temporary structure; horses set in and planks laid across.

Q. Who put it in?

A. I don't know.

Q. Did you go on Island Number 3?

A. I did.

Q. You was looking for timber?

A. Yes, sir.

Q. At whose request or by whose permission?

A. I was looking for timber. I did not find what I wanted and I did not have to get permission to cut it.

Q. Did you go all over the timbered part of Island Number Three?

A. Yes, sir.

Q. Clear down to the foot of it?

A. Yes, sir; but I did not find such timber as I wanted.

Q. Anybody living there?

A. No.

Q. No house there then?

A. No.

Q. You say you do not know who put that structure across there?

A. No.

Q. Who claimed to own the island then at that time?

A. I think Captain Meade owned it then. He claimed to own. I guess he owned it.

Q. You do not know what time a day it was you was there?

353 A. Yes, sir. It was in the afternoon.

Q. How did you get back onto Island Number Four?

A. The same way I got over.

Q. Did you ever go across from Island Number 4—that is, the big island—across the south channel on to the south shore?

A. Many times, over the bridge.

Q. Did you ever go on foot across?

A. No; not across the channel; but I drove through it many times with a horse and buggy.

Q. Never went across on foot?

A. No, sir. I never had occasion to.

Q. Driven through with a horse and buggy?

A. Many times.

Q. All seasons of the year except when there would be ice?

—. ——.

Q. Whereabouts did you drive through?

A. Above the bridge.

Q. The present bridge?

A. Not the present bridge. There was a bridge right above the present bridge. We drove through it; we had kind of a driveway.

Q. Above the present bridge?

A. Yes, sir.

Q. The old bridge which then existed was about 2 or 3 times the width of it above the present bridge?

A. No. It was at the side of the present bridge. I don't suppose there was 4 feet difference between the two.

Q. Where you drove through was pretty near the mouth of the south channel?

A. Yes, sir; just about.

Q. Did you drive across there at any particular time that you can now remember of; at a time when something transpired that you can now remember it by?

A. No; I could not say any particular time, or that anything happened.

Q. Did you ever see the water in the river at the time of a freshet as it run over the dam that you speak of—the old dam—as it passed down from the dam to and by the head of Island Number 4?

A. Yes, sir; I have seen it.

Q. Did you ever see it at a very high stage when it passed down over that course?

A. Yes, sir; I did.

Q. Was there a bridge across the mouth of the south channel when you went to Kaukauna in 1869?

A. Yes, sir.

Q. Did you ever see the water at a time of great freshet, as you have mentioned, when it flowed over the bridge?

A. No; I never saw it flow over the bridge.

Q. How high up above the surface of the water in the ordinary stage was that old bridge?

A. I should say about 4 feet.

Q. Did you ever see the water at so high a stage in a time of freshet that it ran over the upper part of Island Number 4?

A. I saw it when it — going over that point, just over the point.

Q. At that time was it not running over the end of the bridge?

A No. The bridge rose from the point, the bridge rose
354 up a little. I never saw it.

Q. The bridge rose up a little?

A. Yes, sir; a little.

Q. The present crossing is turnpiked out part way, and then the bridge is pretty nearly level with the turnpike?

A. Yes, sir; I think so.

Q. The old bridge you think rose up from the land and was higher, so the water did not run over the bridge?

A. No; I never saw it run over the bridge.

Q. How high up on your wagon, with reference to the body, did the water come when you drove across the mouth of the south channel, as you have said?

A. There was one place in the middle—kind of a sink-hole—where the hubs of the buggy would drop into the water. There is a kind of a sink-hole, I should say 12 or 15 feet, anyway, just like it was scooped out. We drove through there and would sink down, and I think there was not but a little, very little, water.

Q. Did you ever drive across there when the water was high?

A. No, sir; not in a freshet.

Q. Did you ever cross on foot the middle channel more than once?

A. No, sir; only once.

Q. Did you ever cross the south channel either upon horseback, in a wagon, or buggy at any other point below the mouth than the place you have stated you crossed in a wagon?

A. Yes, sir; I have driven the south channel.

Q. Below the mouth?

A. Yes, sir.

Q. How far down?

A. About at the same point where the railroad bridge is now.

Q. With reference to the Badger mill, where is that?

A. Where the railroad bridge is. The railroad bridge is right below the Badger mill; not quite so low down. We used to have to drive from where you drive down to go to the office of the Badger mill, parallel with that street—that is, parallel with the river bridge.

Q. You crossed in a buggy?

A. Yes, sir.

Q. The south channel, in the neighborhood of the present Badger mill?

A. Yes, sir.

Q. About where their office is?

A. Yes, sir.

Q. What depth of water did you find there?

A. In the ordinary stage of water there would be from 6 to 10 inches.

Q. It would come up above your wheels?

A. No.

Q. What year did you cross there as low down as that?

A. I don't know what year. There were a number of years we drove there.

Q. Before or after 1872?

A. No; from '72 to '73, or four years afterwards; maybe longer, for all I know. We drove through there until they commenced to blast that race out.

355 Q. Do you know at any time when you crossed over the middle channel or the south channel, as you have mentioned, whether the water was flowing over the dams at Menasha or Neenah, or whether the water which came downstream or whether the water was coming through the wheels at Menasha and Neenah?

A. I don't know. I was in Kaukauna and I had no occasion to know whether the water was flowing over those dams or not.

Q. Do you know whether drift-wood lodged in the middle channel at times?

A. Not to my recollection.

Q. You don't know?

A. No; I don't remember that I ever saw any there.

Q. At present there is a bridge across near the mouth of the middle channel, is there not, from Island Three to Island Number 4?

A. Yes; a little above there.

Q. How long has that been across there?

A. I don't know exactly how long it has been there. It has been there 7 or 8 years, I should think.

Q. Was there a bridge from Island 3 to 4 when you first went there?

A. No, sir; there was nothing there.

Q. Was that bridge put across there about the time or shortly after the Meade & Edwards channel was improved?

A. As near as I can recollect, about that time or soon after that time; a year or two after that.

Q. Did you ever go over that bridge from Island Number 3 to 4?

A. Yes, sir.

Q. Many times?

A. Not very many times.

Q. Had you any business that called you over there?

A. Yes, sir; I had some business about two years ago.

Q. Did you go over often or seldom?

A. Not very often. I went over there only once, that I remember of.

Q. Do I understand you to say you never crossed the middle channel on foot but once?

A. On foot—I meant below there.

Q. Below this bridge?

A. Below this bridge; below where we had reference before.

Q. Did you ever cross the middle channel on foot above the bridge upstream from this foot-bridge?

A. No.

Q. Did you ever cross the middle channel at any other point except the one you first mentioned down at the lower end?

A. No, sir; except below, and then late years over this bridge.

Q. You never crossed on foot except that one time?

A. No; only that one time.

Q. Can you remember whether you ever saw the water in a time of a great freshet high enough so it did run over the south end of this bridge which crosses the south channel?

A. No; I don't remember of ever seeing it on top of the bridge.

Q. Did you ever see the water up on top of the bank on
356 the south side?

A. No, sir.

Q. How wide was the south channel where you crossed it that you speak of?

A. The channel was then about the same as it is now.

Q. How wide was it?

A. I don't remember how wide; it is not very wide; I think there used to run about 40 feet of water in it.

Q. In width?

A. In the regular stage of water; in a freshet, of course, there would be more; ordinarily I should think there would be about 40 feet of water flowing.

Q. How wide was the north channel?

A. I don't know; I did know, but I don't remember now. I helped plan the bridge there.

Q. That did not run square across the channel?

A. Pretty near.

Q. The city bridge near to the Gus Smith mill?

A. Yes, sir; very near square across it. I could not say now how long that bridge is; there are 3 spans and the channel is narrowed up some; I don't remember how long the bridge is; I recollect this: I think it is considerable over 200 feet wide.

Q. How long is that bridge across the south channel—the old bridge?

A. I don't know.

Q. Is it as long as the one across the north channel?

A. No, sir.

Q. Was it half as long?

A. I don't think hardly that; you might call it the channel in high water, but in an ordinary stage of water there was no water under the north end of the bridge; formerly there was a channel then where they have the bridge now; they have filled up a good deal of it now.

Q. Turnpiked?

A. Yes, sir; then they bridged the channel.

Q. Did they ever turnpike any across there before the Kaukauna Water Power Co. people built their dam across the mouth of the south channel? I ask you if the city ever turnpiked out any before the Kaukauna Water Power Co. people put their dam across the mouth of the south channel.

A. No; the present bridge and the present turnpike were built a year or two after they put that dam there.

By Mr. CARY:

Q. When you went to Kaukauna in '69 was there a bridge across the south channel from Island Number 4 to the south shore?

A. Yes, sir.

Q. Do you mean to be understood as saying that in an ordinary stage of water there was no water at that time running under this bridge—under the south channel?

A. Under the north end.

357 By Mr. ORDWAY:

Q. When there is no water running over the Menasha and Neenah dams and the wheels are all closed at Menasha and Neenah there would be scarcely any water flowing over this Government dam at Kaukauna, would there?

A. Well, if the wheels were all closed at Menasha and Neenah and no water going over the dam, — would naturally make the water very low in the Fox river.

Q. There would not be any water substantially running?

A. Yes; there would be some water.

Q. Where would it come from?

A. There would be water running.

Q. Over the Kaukauna dam?

A. Not over the dam; no; if the water stopped flowing there, it would make the water naturally low.

Q. Is not that the condition of the water at the present time?

A. I don't know.

Q. Is it not a fact that there is no water running over the dams at Neenah and Menasha now?

A. I don't know; I have never paid any attention to it?

Q. Do you know how many inches of water or how many cubic feet of water the wheels at Neenah and Menasha will now let through when they are all running?

A. I don't know.

Q. Do you know how the amount of water compares which they have been using during the past year with what they used in 1869 and so on to 1872 at Menasha and Neenah?

A. I don't know how it compares. I do not know how much they drew then and I do not know how much they draw now.

Q. Do you know how long it takes ordinarily the mills at Menasha and Neenah, all running as they ordinarily do, to vary the head of water in the pond or lake above the dams at Menasha and Neenah?

A. No, sir; I do not know anything about that.

Q. If there was, for instance, two hundred thousand cubic feet of water a minute running over the dam at Menasha and Neenah and the wheels at Menasha and Neenah were all shut down, and thereupon the wheels at Menasha and Neenah were all thrown open and one hundred and fifty or two hundred thousand cubic feet a minute let through these wheels in addition to what was running over the

dam, would it not increase the flow of water at Kaukauna very nearly double in a very short time?

A. Not double from what it was; a couple hundred thousand would increase it somewhat.

Q. It would increase it by an amount which there was more let through?

A. Certainly.

Q. Do you know whether you ever saw the water in the
358 Fox river running at its natural stage at Kaukauna after you came there in 1869?

A. Yes, sir; I have seen it running at what we call the natural stage.

Q. How do you know but what at the time you saw it—at the time you refer to—there was being let through the wheels at Menasha and Neenah twice as much water as was running in the stream at that time?

A. I do not know anything at all about it. We had a certain mark to show the stage of water in the river. When it got to that we called it an ordinary stage of water, and when we got above it we called it kind of a freshet, and when it got below that we called — a low stage of water.

Q. Don't they stop the flow of the water at the Menasha and Neenah dams at certain periods when the water gets low?

A. I do not know; it certainly stops. When there is not much flow there coming down it stops itself.

Q. Is it not a fact that they stop the water there at times when it gets at a very low stage?

A. I don't know anything about it.

Q. Is it not true that they open their flood-gates at Menasha and Neenah at certain times and let off a great deal more water than runs naturally in the stream?

A. I don't know as to that; I don't know anything about their arrangements up there.

Q. Do you know whether they have flood-gates, head-gates, for the purpose of letting off the extra amount of water?

A. I have seen those; I know they are there.

Q. Did you ever see them open those flood-gates for the purpose of drawing off the water on the lake?

A. I don't know as I heard them say; I know they were put in for the relief of high water. I don't know what their arrangements are about that; I have seen them there several times.

Q. Do you know whether they are running a full supply of water—that is to say, all the water which the wheels will use at Menasha and Neenah now?

A. I don't know anything about it.

Q. Do you know what the stage of water has been in the Government canal during the past summer and fall?

A. No; I don't know about the heigth.

Q. Have you heard during the past summer and fall that the Government had notified the canal company and its lessees at

Kaukauna that they were drawing too much water on account of the low stage?

A. No; I have heard nothing about it the last summer.

Q. Did you ever hear that?

A. Yes, sir.

Q. At what season?

A. I think it was in 1887.

Q. Two years ago?

359 A. Four years; 4 years this summer; 3 or 4; I guess it might have been 1886; I got such a notice myself; it was after I got through there myself with the water power.

Q. Do you know whether the water was running over the Menasha and Neenah dams at that time?

A. I don't know, but I got such a notice at that time.

Redirect examination by Mr. HOOPER:

Q. You say that the time you crossed the south channel you don't know whether the Neenah and Menasha mills were running or whether the water was flowing over the dams?

A. No; I had no means of knowing.

Q. Do you know whether at the times you crossed you were getting the average flow of the stream at Kaukauna as it ran past there from day to day at this time?

A. Yes, sir; the ordinary stage of water during the summer. We had about so much water every day, except on Monday, when the water would be lower.

Q. Was it on Monday you crossed the stream or otherwise?

A. I have crossed all days of the week. There was hardly a day but what I drove over that; most always drove through the stream in summer.

Q. About what time Monday would you begin to get a return flow?

A. Along about noon or a little after noon the water would begin to raise; it would begin a little before noon. About four o'clock in the afternoon we generally get a- ordinary stage of water.

Q. And then last about that stage through the week?

A. Yes, sir.

Q. How far is Kaukauna by the river from Neenah and Menasha, about?

A. I don't know exactly; it is 12 miles by rail, and I should think about 13 or 14 miles by the river. I think it is more—that is, from Kaukauna to Menasha.

Q. When you drove across the south channel in your buggy was there a bridge you might have crossed on?

A. Yes, sir.

Q. Did you at the same time drive across the north channel?

A. No; I never drove across the north channel.

Q. Why?

A. I could not do it.

Recross-examination by Mr. CARY:

Q. Why did you drive across the south channel in the water rather than go across the bridge?

A. It was a good chance to water horses. I had a horse in those days that would not drink anything but river water, and I would drive in to water him.

Q. The water was good for drinking purposes in the south channel?

A. Yes, sir.

360 Q. It was not stagnant water in the south channel?

A. No; there was a little flow to it.

Q. How wide was the south channel at its mouth?

A. I should say about 40 feet. I would not be positive, but about that.

Q. Did you ever see the water running in the south channel at its mouth when it was wider than 40 feet?

A. Yes, sir.

Q. How much wider than 40 feet?

A. Twice that.

Q. Have you noticed when it was three times that width?

A. No, sir.

Q. Four times that width?

A. No, sir.

Q. Five times that width?

A. No, sir.

Q. Not in any stage of water?

A. No, sir; not in the south channel.

By Mr. ORDWAY:

Q. How often in the course of the season would it happen that on Mondays there would be no water to speak of running over the Kaukauna dam—Monday morning, say?

A. About half of the season—that is, as long as the old dam was in; about half of the year that would happen; in the latter part of the summer and fall and part of the winter.

Q. And then what time in the day did you say the water would get down to Kaukauna?

A. The water began to come up about noon.

Q. What time in the afternoon would it get up?

A. Three or four o'clock in the afternoon we would have a regular stage of water again; sometimes sooner.

Q. That was about what years?

A. Until the new dam was built. After the new dam was built we did not notice that so much.

Q. The same amount of water would run over the new dam as over the old one?

A. As long as water comes over the dam we have no fault to find.

Q. Would it make any difference whether it run over one dam or the other when it was shut down at Menasha?

A. Yes, sir; it run through the old dam. It leaked so bad it let the water behind run dry. The new dam held the water behind all up.

Q. The new dam was built in 1872?

A. I don't remember now; not so early as that.

Q. Was the new Government dam built before or after you increased your amount of water in 1872?

A. After.

Q. How many years after?

A. I should say some 7 or 8 years after.

Q. That would make it clear down to '80?

A. Six or seven years. I don't know exactly when it was. It was six or seven years afterwards.

Q. That is your best recollection?

A. Yes, sir.

Q. After the new dam was built, the new Government dam, were there times and parts of seasons that on Monday mornings there would be no water running over the new dam?

A. Yes, sir.

Q. What portion of the year?

361 A. Generally towards the fall of the year; along in the fall of the year; perhaps September and October. That is generally when we have the lowest water in the river—that is, we had it in those years, perhaps, Monday mornings. There would not be much or any water running over the dam except through the center gap.

Q. Is there any gap in the present new dam?

A. Yes, sir; there is a place in the new dam 2½ feet lower than the main body.

Q. How long in extent across the river is that lower place?

A. I could not say.

Q. Was it as much as one hundred feet?

A. I should say so.

Q. Were there any times Monday mornings along after the new dam was built when there would be no water to speak of running over the new dam, any part of it?

A. Over the main body or gap?

Q. Any part.

A. There is always a good volume of water going through the gap.

Q. Has there always been a good volume of water going through that gap during the past summer and fall?

A. I don't know so much about it. I guess that gap is closed now. I think it is.

Q. Are you sure there ever was a gap?

A. I know it. There is a part of that dam that is lower.

Q. How long do you think that gap remained there from the time that new dam was built? You have testified to your recollection as to what was the appearance of the flow at a usual stage of water. I was asking you these questions to see what your memory was as to the flow at different times, and then to see if it was possible that there

was a usual flow at these times. I ask you again if the wheels at Menasha and Neenah were closed and the mills not running and there was no water running over the top of the Menasha dam and Neenah dam if the water would not be substantially all out of the lower Fox and no water running over the Kaukauna dam within a few hours afterwards.

A. It would certainly draw the water down at those levels very much.

Q. Is there any stream running into the Fox river between the Menasha dam and Kaukauna dam?

A. Yes, sir.

Q. How many?

A. I know of one.

Q. How large a stream?

A. A little mud creek up here.

Q. Where does that come in?

A. About 2 or 3 miles.

Q. Comes in at the Cedars?

A. No; right above here; halfway between Menasha and Appleton.

Q. Is that little stream dry in summer sometimes?

A. No; I don't know as it is. I think there is always a little water.

Q. What is its size?

A. A little bull-frog pond. We used to go there to spear
362 bull-heads.

Q. Is that substantially the only stream running in between Kaukauna and Menasha?

A. I think that is all.

Q. Have you been living in Kaukauna during the past fall and winter?

A. Yes, sir.

Q. About two months ago was not the water all out of the stream at Kaukauna and no water at all running over the Government dam, and were they not at that time putting in their bulkheads in front of the big Kaukauna paper mill and the American pulp mill, with the bottom of the canal substantially clean of water?

A. I did not see it that way. I have been out of town considerable and I did not see that.

Plaintiffs are at liberty to produce proofs of title before the court.

N. M. EDWARDS recalled for the plaintiffs and examined by Mr. Hooper:

Q. Is the Government dam at Kaukauna of the same heigth from one end to the other?

A. The top is nearly level, with the exception of a sluiceway of about 80 feet or 100 feet near the center.

Q. How deep is the sluiceway?

A. I have understood just 3 feet. I don't know from measurement.

Q. By what method is that sluiceway opened and closed?

A. I think they put in planks to stop the water; no permanent gates.

Q. Planks standing down endways into the water?

A. No. I have never seen them put in and I don't know whether they have arranged for that.

Q. Intended to be a movable dam to that extent?

A. Yes, sir.

By Mr. ORDWAY: Has that been filled up level or otherwise?

A. Yes, sir; that has been filled up for the last few years.

Ques. by Mr. CARY: Closed up, you mean?

A. Yes, sir; closed up, to make the water fill up to the top of the dam.

Plaintiff produces a map received in evidence and marked Exhibit A.

Q. What is this map which you produce and mark Exhibit A?

A. A map showing the measurements downward from a level plain, passing through the bench-mark I mentioned the top of foundation of the northwest corner of the store on lot 6, block 2, of the island plat.

Q. Does it also represent the meandered lines of the river, north side and south side, extreme south side?

A. It does.

Q. Above and below the Government dam?

A. It does.

Q. How are those lines colored?

A. In green.

Q. What do the red figures on the map represent?

363 A. They are the measurements from the level plain passing through the bench-mark.

Q. Are these measurements above the Government dam measurements down or measurements up?

A. Measurements down, except where they are mentioned with a plus.

Q. And then they are measurements up?

A. Then they are measurements up from the plain. I wish to correct that: They are put in brown rather than in red—the red figures down and the brown up.

Q. Have you any black figures?

A. I see there is an error in copying. I will put a plus where they are above. The blue letters and the blue figures are to show the water surface more particularly, and those blue figures at the end of the lines on the canal and along the side of the retaining wall, with the heig*ths* of the water actually measured at the time I took the levels of the surface, they were actually taken.

Q. How do they read, from what bench-mark and in what direction?

A. They read downward from this bench-mark mentioned at the store. They indicate the actual heig*th* of the water when I took the surveys below the aforesaid-mentioned bench-mark; that was

in August, 1882, and the blue figures on the island shore on the opposite side of the river indicate the same surface of the water and were taken at the same time, and the figures right opposite "K," above the head of the island, in blue, and the same of those with "I," were averaged; between the average; I did not do that exactly.

Q. What do those red figures represent—soundings, two measurements, down to what?

A. To the bed of the stream.

Q. Did you make these soundings at the time of your survey?

A. I did. I took the levels at that time.

Q. Were those soundings actually made at that time?

A. Yes, sir.

Q. How did you take them?

A. We went in Monday morning, when the water was low on the dam, very little going over the crest. I had two men, with heavy iron poles, to drop them down so they could brace themselves at the bottom, and they clung together and held the leveling rod, and they would take about three steps at a time, as near as I could judge, 9 or 10 feet, and as they went that distance along across the river in the range I took my angles in the instrument to them below so as to get cross-range to them to locate them; keeping the line ranged, I took the angle from the next point to locate them, and I took the levels at the same time on this leveling rod.

364 Q. In what condition was the south channel at that time?

A. The south channel was nearly empty, the water having been shut out by a wing dam running up about on the line of "Q M" on the map. That was a temporary, small dam.

Q. Was it not more on the line of "Q G"?

A. It went down to about here. It was a slight embankment of dirt with a few boards and horses.

Q. What do the black figures represent which are set on the black dotted lines running off from the red dotted lines which indicate the middle thread of the channels?

A. I placed the figures in black, representing the number of feet from the center point in the dam, taking the center of the dam and measuring from there to the different sections.

Q. Those, then, you would say, represent the distances of the cross-sections from the middle of the dam?

A. Yes, sir.

Q. Do you think of anything else?

A. From "O" about to "I," near the head of the island, I have drawn a red line, which represents about the highest part of the gravel bed of the river between the two channels.

Q. Extending up above the head of the Island Number 4?

A. Yes, sir.

Q. On this map where did you represent the head of the island with reference to the point which you fixed as the head of island on a map produced on your examination by the defendants?

A. I have the same tree located that was located on that map, and we found the stake in this latter survey about 12 feet above that

same tree. That would bring it very near the point of the island now.

Q. The two maps very nearly correspond?

A. Yes, sir.

Q. What—is it represented on this map as stump of meander tree?

A. We found the actual stump remaining of the meander tree between sections 23 and 24, now in the river, and shown on this section line of section- 23 and 24 at its south end, and marked stump of meander tree and surrounded by a blue circle. I understand the meander tree on the south side, south channel, surrounded by a green circle with a small green circle in it near the letter "W," to be the meander tree as recognized by the old surveyors and which I have seen marked as a Government mark by a gouged compass mark. I have not been able to find notes enough to fix it from my own absolute knowledge, but it was so understood; that is the best evidence. I have also run that meander line from way the south side of the river at the division line between the ranges 18
365 and 19, about a mile below, away up past, and took it to the river and with various distances, and it proved very nearly. It comes around and strikes that tree; it could not vary very much; from 5 to 10 feet.

Plaintiff- produces another map, which is received and marked Exhibit B.

Q. What is this map marked Exhibit B?

A. That shows cross-sections upon these lines with the figures in red below the dam on "Exhibit A" by corresponding letters.

Q. They, then, are a profile of the surroundings shown by the red figures on "Exhibit A"?

A. They are below the dam.

Q. What does this map, Exhibit C, represent?

A. That shows an enlarged section of the lines "U," "I," "J." Instead of giving figures given on the other I give the figures and assume from the bottom of the river up to the assumed level, which I considered as near as my judgment would allow of the heig*th* of a fair low stage of water; not a very extreme low stage, but a stage which would give me an average low water of the river, and that line is represented by the dotted line marked "Assumed surface of water for fair low stage."

Q. When was that made?

A. Within 2 or 3 days, and dates from when my work was taken.

Q. Within a day or two last past?

A. Yes, sir.

Q. What do these show?

A. The figures in the tables below show the depths as given on the red figures in the other map, Exhibit A, with the proper additions, etc., to give the new depths from the dotted line to the bed of the river and give it in deep sections and shallow sections, so we have divided it up into sections to get an average of different sections, and also to get the full cross-section of the stream.

Q. Have you figured on the map what you figure to be the full cross-section of the two channels north and south and put that on the map; and, if so, where and what?

A. Yes, sir.

Q. Explain your map.

A. I found the level of the surface of the water as I have already given for it and as shown on the map Exhibit A, and then I judged that it would be about so many inches more water to bring the water up to a fair stage of low water, having known the river so many years and knowing the condition the water then was running in one channel, and I assumed about $\frac{3}{10}$ higher than I actually found the water that day, and I understand that line, that dotted line, from the island right across level to the south shore, that
366 assumed line. I have taken $\frac{3}{10}$ higher what I actually found the water; I found the water on the same side. I found the water about $\frac{3}{10}$ higher than on the north side, and therefore I made the slope of the surface parallel with that dotted line until I struck the islands; then from the islands I drew it level with this higher part, which was nearer the island and $\frac{3}{10}$ higher than I actually found the water. Then I found a bank in south of the head of the island, a dam running upstream and shutting off the water between the two channels that was made of gravel, made of one thing and another, with some plank and horses, and not knowing the heig*th* of that I assumed the slope was regular from the island; sloped where the dam did not effect it down to the deeper part of the channel running south, and having deducted that solid area of section from my calculations to get the cross-section of the stream or channel.

Q. When you say you have deducted that solid area what do you mean?

A. I assumed there was water instead of that dam, and that is as favorable as it could be, in my judgment, for the south channel. I could not say that all was put in, but it seemed to look so from the map. I found the main channel to have, under this assumption of the low-water surface, an area of 894 and $\frac{42}{100}$ square feet and the south channel to have an area of 244.76 square feet.

Q. How long have you known this stream at Kaukauna?

A. About 23 or 24 years.

Q. Describe how thoroughly you have known it.

A. I have had to do with the river improvement for the first ten years of that 23 and been required to be up and down the river every week or two, and therefore in that capacity have learned quite a good deal of the river, and besides that, along about '72 or '73—I could not give the exact date now—and since then I have more particularly noticed the water in those channels, having reasons to go across a good many times and in some cases to obstruct some of the channels—the middle channel. I have built two or 3 dams—3 dams, I think—or had charge of building 3 dams across the middle channel, and I have seen the south channel damed temporarily at the head of Island Number 4 and I have been consulted about a dam across the main river, from Island Number

Three across to the north shore, two different times. I did not have charge of building them entirely, but I made surveys
367 of the channels both at the head of the south channel and made surveys of the middle channels at different places from the head of Island Number 4 to about down to the Patton mill.

Q. From your knowledge of the river, regardless of this survey and cross-section work represented by these maps, what, in your opinion, was the division of the natural flow of the river at an ordinary stage before the last Government dam was built between the south and north and middle channels?

A. I think *while* it is very difficult to answer that question on account of the various heig*ths* of the river and not having *been* measured the water actually when I knew the volume flowing in the river. I have seen the channels very low, indeed, and then I have seen them, of course, in a moderate low stage, fair low stage. The south channel would vary a very great deal, from a very low, indeed, to a fair low stage. It would vary a large amount.

Q. The stage I have asked about is the "fair average stage of water," on which calculations are based for hydraulic purposes as the flow of the stream.

A. In times past I have generally placed the main river at one-half, the south channel ¼, and the middle channel at ¼. I should judge that to be fully enough for the south channel.

Q. When the water is lower than that would the south channel have a larger or smaller proportion?

A. It would have much smaller.

Q. And this proportion would decrease as the heig*th* of the water was reduced?

A. Greater in proportion than that in the north channel.

Q. At the point where you made the cross-section, near the head of the island on which you have made a calculation of area, in which stream was the flow of the water the most rapid?

A. Generally in the deeper channels, and therefore in the main channel, the north channel.

Q. How would it compare, the rapidity at that point of the north with the south channel?

A. Well, there might be parts of the north channel as low as the south channel and deeper parts of the north channel would possibly be nearly double.

Q. Taking the flow of the channel as you found it and the area of the cross-section as you have calculated them, how, in your opinion, would the water be divided between the stream going north and the stream going south of Island Number 4?

A. I should judge that not more than ⅛ of the flow of the river would go in the south channel.

368 Q. That judgment has been with reference to the assumed high water on which you made your calculations?

A. Yes, sir; about the average low flow.

Q. As the water actually was in the north channel and assuming the same heig*ht* of surface in the south channel, what would have been the division at that time when you surveyed?

A. That would have been very much less in proportion to the south channel; that would not have been a fair data, because it was a low stage of water, a low stage, perhaps not more than $\frac{3}{8}$ the flow of the river, and there I should say it would be less than $\frac{1}{6}$, probably not more than one-seventh, of the flow of the river if it had been allowed to pass freely in both channels.

Q. About what head of water is practicable at what you call Meade & Edwards' power, between Islands 3 and 4, with the improvements as they are?

A. Without relying upon the present dam on the north channel we calculate for 14 feet head with that dam as it is now; probably 16 feet head can be obtained at the mills.

Q. How many cubic feet flow of water is required on a 14-feet head for the horse-power? Give us the figures.

A. Divide 528 by 14, and the quotient is the number of cubic feet required per minute to make one-horse power under a 14-feet head.

Q. How much under a 16-feet head?

A. Divided 528 by 16, and it gives the number of cubic feet for one-horse power per minute. The general formula *is* to find out how many cubic feet to make one-horse power under any head is to divide 528 by the number of feet head, and it will give the number of cubic feet for one-horse power under the head per minute.

Q. Is that theoretical or practical?

A. Theoretical.

Q. What is the difference?

A. The theoretical is the full calculated power without the loss by friction or loss in converting the weight of water under the head into practical power.

Q. How much is the difference in practical and theoretical use?

A. About 20 to 25 per cent.; they generally get from 75 to 80 per cent. actual.

Q. The practical is about 25 per cent. less than the theoretical?

A. Yes, sir.

Cross-examination by Mr. ORDWAY:

Q. Did you ever see the Fox river before the Government dam was built?

A. I did not.

Q. Where is the deepest part of the north channel from the Government dam—down nearest to the north side of the channel, or where?

A. The most of the deep parts of the river are along the
369 north side of the north channel. "Exhibit B" will show the profile.

Q. The profile of the bottom of the north channel as well as the bottom of the south channel?

A. Yes, sir.

Q. So far as they are prepared?

A. Yes, sir.

Q. Did you ever see the river before the retaining wall was built which extends from the north end of the Government dam down to the red mill below, owned by A. L. Smith?

A. I did not.

Adjourned until 9 o'clock.

TUESDAY MORNING, 11*th March*, 1890.

Counsel appeared as stated yesterday, and there was also an appearance Tuesday morning by the Chicago & Northwestern R. R. Co., by Winkler, Flanders, Smith, Bottom & Vilas, by A. W. Hard, counsel. There was also an appearance by Breese J. Stevens for the Green Bay & Mississippi Canal Company.

N. M. EDWARDS recalled and examined by Mr. Hooper:

Q. Did you base your estimate of the flow of the respective channels in view of the fact that the retaining wall of the Government canal on the north side of the river is where it stands?

A. Yes, sir; judging by the condition that existed at the time the survey was made.

Plaintiff- having finished *his* examination of Mr. Edwards, Mr. Stevens examined him as follows:

Q. I think you testified that you was superintendent of the Green Bay & Miss. Canal Co. for a number of years?

A. I think I did.

Q. I call your attention to defendants Kaukauna Water Power Company's "Exhibit Number 2." I ask whether it indicates the present location of what is called the U. S. Government dam, including the extension to the first lock.

A. It does approximately.

Q. It is slightly different from the original map now held by the G. B. & M. Canal Co. and made under the direction of Jennie?

A. It is somewhat different.

Q. You will prepare a sketch of that map and attach it to your deposition here as our exhibit, will you, with the consent of these parties, indicating the location of this extension of the Government dam down to the first lock?

A. I will.

Plaintiff- insist*es* that if any part of that map is put in evidence the whole map, so far as relates to the Kaukauna Water
370 Power Co., shall be put in *in* evidence, and that there shall accompany it the note at the commencement of the volume of maps that it is a part of and which explains it.

Q. Is it a serious matter at all to make a tracing of that map?

A. No; it is not a very serious matter. It takes in, though, the whole length of the canal, and probably you don't want further down than the G. B. & M. Co. lots.

By Mr. HOOPER: I want it down to the second lock and including the second lock.

Q. You will make, then, a tracing of the Green Bay & Mississippi Canal Company's map, originally prepared by Nearing, under the direction of D. C. Jennie, for the old Fox River Improvement Company.

A. Yes, sir.

Q. Make that tracing and extend it down at least to the second lock.

A. Yes, sir.

Mr. STEVENS: I shall now offer that tracing in evidence, if there is no objection, and it will be attached.

By Mr. HOOPER: With the understanding that the note at the beginning of the volume descriptive of the maps accompanies the map, I don't object.

Defendant Kaukauna Water Power Company objects to the introduction of any testimony on behalf of the Green Bay & Mississippi Canal Company under its answer herein and the counter-claim set up in said answer for the reason it does not set up any defense or valid counter-claim.

Plaintiff- makes the same objection.

Q. Are you familiar with the lines of that map—I now refer to the Green Bay & Miss. Canal Company map—as the lines lie upon the ground?

A. Some of the shore lines were obliterated when I came, and I did not recognize all of the shore lines as represented on that map.

Q. So far as they are not obliterated, you do — it is a correct map?

A. Yes, sir; I should judge it to be a correct map of the locality.

Q. How far down or below the Government dam is the extension of the dam built in the river before it turns in there and goes upon the shore?

A. The retaining wall, as we call it, of the canal, I judge, strikes in line somewhere about the flouring mill.

Q. Is that the location of the bridge?

A. Yes, sir; at the upper side of the north end of the bridge.

Q. And the bridge included on the Kaukauna Water Power
371 Company's Exhibit 2, is it?

A. Yes, sir.

Q. The curve in that embankment is correctly indicated upon the canal company map, is it not?

A. I judge it to be correctly indicated there.

Q. Down to that point that extension is wholly in the river, is it not, as the river originally was?

A. I cannot say personally, not having seen the river before it was built.

Q. What is your judgment in regard to it from what you did see or have seen—what would be your opinion in regard to it?

A. I should rather judge it was. It had been placed, the heft of it, in the river, until it got down to the bend.

Q. Down to the bridge?

A. No; not fully to the bridge, probably, but it is merely a matter of judgment—my knowledge of the cross-section of the river.

Q. What was the character of the bank?

A. From the bridge down to the upper lock, with reference to its being abrupt or a gradual slope to the water from the canal bank—from the retaining bank of the canal to the water it was rather a gradual slope.

Q. Then after the water had been held to its present level—if the water had been raised to the present level before the embankment between the bridge and upper lock had been built it would have run over the ground into the river below?

A. Yes, sir.

Q. It requires the embankment between the bridge and upper lock to hold back the present level of the land above the dam?

A. It does.

Q. So it did all the way up to the dam?

A. Yes, sir.

Q. What is the character of the bank with reference to its being abrupt or a gradual slope to the river between the upper lock and second lock?

A. There is a high bank required there. Although there is a drop of 9 or 10 feet to the lock itself, there is still a high bank required.

Q. An artificial bank required to hold it up with the level?

A. Yes, sir.

Q. This is where this dam, extension, lock, canal, etc., are—the Government dam, lock, extension, so called?

A. Yes, sir.

Q. And were built by the board of public works and Fox & Wisconsin Improvement Company, its successor?

A. I have got evidence to that effect.

Q. This was built according to the plans of D. C. Jennie, on file in the office of the secretary of state?

A. I do not think it was. I think it was built before this time.

Q. By the board of public works?

A. Yes, sir; I think so.

This map, which is here produced, I now offer, the original map of which Mr. Edwards is to make a tracing.

372 By Mr. ORDWAY: Enter another objection there to this testimony which Mr. Stevens is now calling out on the part of the G. B. & M. Co. with reference to the construction of the canal and the surface of the land from the dam downstream as far as has been indicated by his questions, on the ground that it is immaterial and not within the issues for trial in this case, and make a formal motion to strike out all testimony of that kind that has been given.

Q. What is this blue line as indicated on this map?

A. I only know from the minutes and notes at the beginning of the books of maps, which explains itself.

Q. When was this map made?

A. It purports to have been made in '59 and the surveys were made one or two or 3 years before. I have seen the original notes.

Q. When was the Meade & Edwards dam constructed on the middle channel?

A. I think it was in 1881.

Q. Not prior to '80?

A. No, sir.

Q. When was the Kaukauna Water Power Company's constructed?

A. About the same time; perhaps partly the same year.

Q. When was the work built by Patton and Hewitt in the north channel constructed?

A. '87, I think.

Q. How much, roughly stated, water power is created by the Government dam, so called?

Defendants object.

A. I should say from 24 to 25 hundred horse power at a fair low stage—at a rather low stage of water at the dam. It is not taking into account the canals.

Q. How much taking into account the canal down to the first lock?

A. It would be probably a half more.

Q. I want you to indicate on the map what lands, if any, are owned by the Green Bay & Mississippi Canal Company—been claimed by them in years past.

A. The retaining banks and flowage of the canal down to the bed, the bridge and from the bridge down, the lots on the Jennie map marked one to 12, a triangular piece marked Improvement Company down to private claim south 45 29 east, running to the river.

Q. These lots are the property which in plaintiffs' complaint are stated as being owned partly by the canal company and partly by Hewitt?

A. Yes, sir.

Q. State whether or not the canal company claim to be the
373 exclusive owners of that property during the years when you was superintendent.

A. Yes, sir.

Q. Exclusive owner?

A. Yes, sir.

Q. State whether or not all the power created by the Government dam and level down to the first lock can be practically utilized on this property, lots one to 12 and the triangular piece and the circular.

A. Not without deepening and enlarging the canal.

Q. By deepening and enlarging the canal could it be utilized?

A. Yes, sir; possibly.

Q. How much enlargement?

A. Take in the full flow of the river.

Q. How much opened at the mouth of the canal?

A. Double the capacity to use it without very much waste of water. It could be used by a considerable waste of the water power, say a two-feet head; possible it could be used now without much more enlargement.

Q. Without any more enlargement how much of it could be used?

A. With the loss of probably 4 or 5 inches of head I should say about one-half of the power could be used of the river, low water; with the water at the top of the dam it would carry easily one-half of the water of the river, with the loss of 4 or 5 or 6 inches of the head to force the water through the canal.

Q. What would be the loss in head if the whole river were forced through there?

A. If the water was at the top of the dam it is possible that the low-water flow could be forced through there by making upon this land, by loosing possibly 2 feet head; but raising the dam six inches or a foot would make a great difference in that respect; you would get the water much more rapidly. From a few inches below the dam it would be impossible to get it through, so my judgment is not in the matter very correct without observing, and it is a hard question to determine with the water at just such a level whether it could be forced through.

Q. I want your best judgment about it. What amount of water power would a loss of six inches of head indicate of horse-power, of water power what would a loss of six inches of head indicate?

A. It would indicate about $\frac{1}{30}$ of the power as used down on the lots of that company; $\frac{1}{30}$ of the power coming into the canal for the loss of six inches head.

Q. Suppose the loss was a foot and a half or two feet?

A. If it was 2 feet it would be about $\frac{1}{7}$; equal a head of 14 feet.

Q. To put my question different, suppose the total water power at Kaukauna is, as you say, 2,500-horse power and canal ex-
374 tension below the north and south lines of the dam would add 1,250-horse power, making in all 3,750-horse power, what would be the loss in horse-power if the river was forced through the canal as it stands?

A. If it should loose, as I suppose, possibly about two feet to force that water through, it would loose about $\frac{1}{7}$ of that or 500-horse power or a little over.

Q. Then, it is possible, in your opinion, to use on the property there 3,250-horse power out of a possible 3,750-horse power, is it?

A. Yes, sir; I should say it would be possible.

Q. State whether or not the Government for the purpose of navigation pur[illegible] and simple has contemplated or planned, if you please, the widening or opening of this extension of the dam.

A. Yes, sir; there has been some contemplation of that.

Q. Would it practically utilize the power of which you have spoken on the lots marked on the Jennie plat 1 to 12 and a triangular piece which is beyond? I mean on half the lots, the half belonging to the canal company.

A. I think it would.

Cross-examination by Mr. ORDWAY:

This is the cross-examination of EDWARDS on his examination as a witness for the G. B. & M. C. Co.:

Q. What was the width of the mouth of the canal at the guard-lock when it was first constructed?
A. 50 or 50½ feet, I think.
Q. What was the depth of the water within that 50 or 50½ feet as it then stood upon the dam then first constructed?
A. I cannot say.
Q. What is the depth of water within that same space now?
A. I cannot give it exactly.
Q. Is there any guard-lock there now?
A. There is not.
Q. How long since the guard-lock was taken out?
A. I cannot say; I think within the last 10 years.
Q. Did you ever see the guard-lock?
A. I never saw it; I think I have seen the recess.
Q. Does that mean the sides?
A. Yes, sir; but not the gates.
Q. How long was that guard-lock up and down stream?
A. Probably 30 or 35 feet.
Q. How wide was the canal originally dug at the top?
A. I cannot give that.
Q. How wide is the canal now at the guard-lock up and down stream, the whole length of what was the guard-lock?
A. It is from 90 to 100 feet.
Q. How deep is the water up and down that space which you have designated as being covered by the guard-lock?
A. I cannot give it.
Q. About?
A. I should judge from the depths of the canal where it is
375 it must be from 7 to 9 feet through there.

By Mr. CARY:

Q. What do you understand Mr. Stevens meant in his direct examination in using the word extension from the dam down to the first lock?
A. The wall and embankment to run the water down to the first lock.
Q. What is that called?
A. Retaining wall and bank of the canal.
Q. What is the whole length called?
A. Just embankment and depression in which the water is; it would form a canal, I suppose.
Q. Is it not called a canal usually when speaking of it?
A. I should say the water part is the canal and the embankment the walls.
Q. Is it not known as the Government canal on the north side?
A. The work is known as the Government canal.
Q. Would it not materially interfere with the use of this Govern-

ment canal for the purposes of this navigation as it is now constructed to use the entire power—water power—created by this dam on these lots designated on the Jennie map from one to 12, inclusive?

A. It would.

Q. Would it not destroy the canal for the purposes of navigation if you were to use all the water power down there?

A. It would, I think, in the present condition. That guard-lock was 45 feet up and down river, the length of the guard-lock.

By Mr. ORDWAY:

Q. How long a distance up and down stream is the canal now at from 90 to 100 feet in width next below the guard-lock?

A. I should say it would be more than that all the way within a hundred feet of the upper lock.

Q. What is the present width of the surface of the canal from the mouth of the guard-lock down to near the bend just above the red mill of Smith?

A. 105 to about 150 feet.

Q. Where is it 105?

A. About 300 feet below the end of the dam, and at the curve it is about 150 feet nearly down to the flouring mill.

Q. Where the widest?

A. Widest, I think, above the bridge, the main Kaukauna bridge or draw-bridge.

Q. How far above right over against it; is it not fair to say that right in the bend it is the widest?

A. Yes, sir.

Cross-examination on the direct examination by Mr. Stevens.

By Mr. HOOPER:

376 Q. When you speak of blue line on that map did you mean a distinct blue line or the shading along the margin of the water-courses?

A. The distinct blue line, pen line, is the claim of the right of flowage and condemnation line, as I understand it; the shaded blue line only shows the water shores.

Q. You say that the retaining wall on the north side of the river and south side of the canal struck the mainland and carried the canal out of the bed of the river on to the mainland at about the point of the upper bridge?

A. That would be my judgment, not from knowledge.

Q. Will you look on that map and see if the blue line on the south side of the canal running westerly up the canal turns off from following the parallel of the canal and runs to the river bank at about that place where you say the retaining wall strikes the river bank?

A. It stops at a surveyed line marked south 38 57 east.

Q. Is that about the point where the canal leaves the river and the retaining wall of the canal strikes the original bank of the river?

A. In my judgment it is about the point.

Q. How far by the river is that above the mouth of the middle channel?

A. About 650 to 700 feet.

Q. Against the mouth of the middle channel on the north side how far is the blue line south of the canal north of the north bank and north channel on a line running from the head of Island Number 3 at right angles with the line on the north channel to the canal?

A. About 115 feet by the Jennie map.

Q. You say that the G. B. & M. Canal Co. claims title to certain lands lying between the canal and the river on the north side at Kaukauna?

A. Yes, sir.

Q. And particularly lots one to 12?

A. Yes, sir.

Q. Does such claim rest on a claim to condemnation or on a claim by purchase, as you have understood it?

A. By purchase, I have understood it.

Redirect examination by Mr. STEVENS:

Q. You have just indicated in a reply to a question by Mr. Hooper a point where the blue line was 115 feet from the river, a point directly opposite the head of Island Number three, at right angles to the channel between Island Number 3 and north bank. Where does that line cross the property claimed by the canal Co.?

A. About within lot 5.

377 Q. Across about within lot 5 and below that line there would be lots from 5 to 12?

A. Five to 12.

Q. Why was the lock you have designated as the guard-lock so called?

A. It was a pair of gates arranged within masonry or stone walls and wooden framework to support the gates.

Q. Why was it so called?

A. To guard against the breaking of any works below, I suppose.

Q. To maintain the dam in case anything should break away?

A. Yes, sir.

Q. Either weak embankment or giving away of locks?

A. Yes, sir.

Q. If necessary in case of such breakage the gates would hold the water at the dam?

A. That was the intention.

Q. Was there any lowering of the level of the water in the pond at that point; was there any change of level overcome by that lock was there any lift?

A. No; there was no indication of any lift, to maintain any lift, except possibly in the freshet they might of wanted to shut out a freshet.

Q. It was merely to protect the work of improvement; it was not designated to overcome any lift at that point?

A. That is it; it was merely for the protection and convenience for improvement below.

Q. I want to know did the guard-lock perform all the offices which is ordinarily performed by what are called head-gates?

A. I think not. Head-gates are generally understood to be gates for feeding water and controlling the water to let into the canal, and in this case it was more to throw them open in case of use and frequently shut them to guard improvements below or in case of high water; it was not intended for feeding gates.

Q. It was not intended as feeding head-gate?

A. No, sir; I think not.

Q. Is it not true that if the work below was as strong as the dam itself there would be no occasion for the use of the guard-lock?

A. Except in case for shutting out in putting in flumes.

Q. For renewing the work?

A. It might be useful in that way.

Q. And for laboring also?

A. Yes, sir.

Q. I understand you to say that you never saw the gates to this so-called guard-lock?

A. No, sir; I never did.

Q. Was the guard-lock in decay when you saw it?

A. It was.

Q. When did you first see it?

A. In '66.

Q. Why did you not as superintendent of the work reconstruct the gates?

A. For the reason that I never saw any particular use for it; the banks were considered strong enough without it. It might have been useful in times since then, but not enough to warrant the expense.

378 Q. Who took out the guard-lock—that is, the side walls?

A. The south wall is yet in. The north wall, I think, has been removed by dredging by the Government since I was on the canal.

Q. For what purpose?

A. For widening the entrance way to the canal.

Q. And why?

A. To admit more water and also so boats could more easily run into the mouth.

Q. For the convenience of the work as a channel of commerce?

A. I could not say for just what reason they did it.

Q. It does serve that purpose?

A. It serves the purpose of navigation and also feeding more water into the mills.

Recross-examination by Mr. ORDWAY:

Q. How deep was the water in that canal all the way down from the mouth of the guard-lock to the present swing-bridge over the canal?

A. I have not done any sounding purposely for that. It would be a matter of judgment.

Q. Did you ever superintend any dredging in that canal?

A. Yes, sir.

Q. What was the depth of the water generally from the mouth down to the swing-bridge?

A. We intended to maintain six feet at very low stage. We dredged generally to seven feet in depth. That was the intention when the water was at the top of the dam.

Q. Is much drifted into the bed of that canal usually?

A. No, sir.

Q. Clay and gravel?

A. No, sir; there could not be much filling in from above. It remains about the same except what falls from the bank.

Q. Pretty fair average, from six to seven feet, from the mouth down to the first lock in depth?

A. I think it would not exceed that, but still I could not give only my judgment.

Q. What is the depth of water in that canal at its lowest stage since you have been acquainted with it?

A. With the exception of a very low time when the mills were drawing it excessively, the boats have not had much trouble in striking bottom.

Q. How much water do boats draw?

A. From five to six feet in general. Sometimes a little more and sometimes a little less.

Q. Is it true that boats have grounded and that the company had to do the dredging above the present swing-bridge, between there and the guard-lock?

A. I don't recollect of having to dredge on account of boats grounding; still it may have been done.

By Mr. STEVENS:

379 Q. How long has the Government been in charge of the work and improvement?

A. About 17 to 18 years.

Q. And during that time they have been expending how much money on the river at that point, at the locks at Kaukauna, and at Appleton on the river—how much money?

A. Oh, probably two millions, I should guess.

Q. Then why is it the Government has not reconstructed the guard-lock; do you know?

A. I do not know their reasons for not having done it.

Q. It was not on account of the great expense, was it?

A. It was not the most necessary thing, I think.

Q. Is it not a fact that the work below the guard-lock was sufficiently strong so it was not longer needed to serve the purpose of a guard-lock?

A. It was not absolutely needed, I think.

Cross-examination by Mr. CARY:

Q. Is the Government in maintaining this improvement of that canal particularly interested in the water for water-power purposes?

A. It is not.

Q. Would they require the guard-lock for the purpose of putting in flumes, repairing them, or anything of that sort?

A. Not for flumes, but for that sort. It would be convenient sometimes for putting in locks and lock-work.

Q. But not for water-power purposes?

A. No, sir.

Q. Was not the guard-lock put in at the mouth of the canal for the purpose of shutting the water out of the canal when occasion required it?

A. I suppose it was.

By Mr. ORDWAY:

Q. Has the canal been widened at any point during its whole length, from the bend over against the red mill up to its mouth, since you have been acquainted with it?

A. There has been dredging around the bend and at the mouth, but I don't recollect. I don't think there has been much dredging between the bend and near the dam; from just below the dam down to the bend.

Q. My question was if the canal had been widened between the bend and its mouth at the guard-lock; your answer is that there has been dredging. Will you now answer the question so I will know what is meant? Has the canal been widened since your acquaintance from the bend up to its mouth?

A. Not to my knowledge, except at the mouth.

Q. Has it been widened at the bend and from the bend as far as the present swing-bridge over the canal? That means around the bend and down to the bridge.

380 A. There has been some dredging around the bend and down by the swing-bridge, but I don't know that it has been widened except right close to the bridge.

Cross-examination on the direct examination of Mr. Hooper by Mr. CARY:

Q. Referring to the Plaintiffs' Exhibit A, you stated that this exhibit was made by you from surveys and measurements made in August, 1882, did you not?

A. Yes, sir.

Q. When you made such surveys was there a temporary dam extending from the head of Island Number 4 across the mouth of the south channel?

A. There was a small temporary dam.

Q. Did that dam shut the water out from the south channel?

A. It did at a very low stage of water; sometimes in high water it broke over.

Q. Was the water shut out from the south channel at the time you made these surveys?
A. I think it was.
Q. How long had that dam been there prior to that time?
A. I don't think it could have been there more than a year.
Q. Did that dam at the time you made those surveys turn all the water into the north channel?
A. It did in low stages.
Q. At that time?
A. Yes, sir; at that time nearly all the water went in except what was turned around by the canals.

T. W. ORBISON, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?
A. Appleton.
Q. What is your business?
A. Civil engineer.
Q. How long have you been a civil engineer?
A. Since the spring of 1876.
Q. How much experience have you had in civil engineering relating to water in the river?
A. I have been engaged in that kind of work a great part of the time for the last eight years.
Q. Do you know the Fox river at Kaukauna?
A. I do, sir.
Q. And north and middle and south channels?
A. Yes, sir.
Q. How long have you been familiar with that ground—those islands and those channels?
A. I have been somewhat familiar with them for 7 or 8 years; more particularly for 4 or 5 years.
Q. Did you know the middle channel before it was improved?
A. I did not.
Q. Have you made any surveys of the river near the head of Island Number 4 to show the depth and contour of the channels?
A. I have.
Q. When did you make the surveys?
A. In September, 1886.
Q. Were you with Captain Edwards when he made his surveys, the time previous to that?
A. No, sir.
Q. Was he with you when you made your surveys in 1886?
A. No, sir.
381 Q. Have you a map showing the results of your surveys in 1886?
A. I have; this is the map.
Q. How does your point at the head of the island agree with the

head of the island as fixed on the map made by Captain Edwards and produced by the defendants?

A. It represents the same point at the head of the island.

Q. What do the red figures on this map indicate?

A. The red figures indicate a vertical distance below a level plain passing through the top of northwest corner of the foundation of a certain store building on lot six, block 2, called the bench-mark.

Q. Is that the same datum taken by Captain Edwards in his survey through the head of Island 4?

A. Yes, sir.

Q. The same bench-mark was taken by Captain Edwards in making the maps produced by the defendant-?

A. Yes, sir.

Q. Are these marks correct according to your survey and measurements?

A. They are.

Plaintiff- offers the map in evidence, marked " Exhibit D."

Q. Was there any water flowing in the south channel when you made this survey?

A. There was just a little. There was some leakage through the temporary dam at the head of Island Number 4 extending across the mouth of the south channel—some leakage.

Q. From your knowledge of streams and flow of streams and of water, what, in your judgment, was the proportion of water of the stream that would flow through the south channel and north channel of this river if not obstructed or inteferred with by any artificial appliances, taking the retaining wall of the Government canal to be the north bank of the river?

A. I assisted Captain Edwards in making up some figures for his testimony, and from what we determined I would judge that about $\frac{1}{5}$ was due or belonged to the south channel and $\frac{4}{5}$ to the north channel.

Q. Is that your judgment?

A. Yes, sir.

Cross-examination by Mr. CARY:

Q. When you made the surveys from which you have made the map called Exhibit B was there a temporary dam from the head of Island Number 4 to the bank on the south side of the river?

A. There was.

Q. Did that cut off the water from the south channel entirely?

A. Not entirely; there was some leakage there, and there was also some water coming down the south channel which was
382 being used as a tail race from the machine shops of the Lake Shore Railway Company.

Q. But it cut off the flow of the river?

A. Yes, sir; almost altogether.

Q. Turned the flow of the river into the north channel on the north side of Island Number 4?

A. Yes, sir.

Q. Your answer or judgment as to the amount that would flow in the south channel as compared with that of the north is based mostly upon the figures that you assisted Captain Edwards in making up?

A. To a great extent; we took most from his data.

Q. You never saw the river in a state of nature before any dams or improvements were put in?

A. No, sir.

Q. Your knowledge only extends back how far?

A. 7 or 8 years.

Redirect examination by Mr. HOOPER:

Q. Did you find any excavation, artificial excavation, of rock in the south channel or bottom of the river?

A. Not of rock. There may have been some rock; there was an excavation of loose rock and gravel and probably some loose rock to allow the water to escape from the machine shops.

Q. For the tail race?

A. Yes, sir.

Q. Your soundings included soundings in that depression or tail race?

A. Yes, sir; they did.

A. P. RICE, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. Town of Kaukauna, below the city. I used to reside in the city for years. I came to Kaukauna in 1851 and resided in what is now the city.

Q. Was there any dam where the Government dam is or near there when you came to Kaukauna?

A. No, sir; there was not.

Q. In what year was that dam built?

A. It was built in 1854.

Q. Did you work on it?

A. Yes, sir; I helped put it there.

Q. Have you lived in Kaukauna or near Kaukauna since?

A. Yes, sir; I make it my home there.

Q. How long have you lived in Kaukauna?

A. I resided in Kaukauna—my father was one of the first American settlers; came there in the spring of 1854. We resided on the hill where Peter Reuter's house stands; we owned that place.

Q. How long?

A. I made it my home there until 1865.

Q. How much of that time did you work in one way or another on and about the river?

A. I have worked in those locks considerable laboring. I helped build the dam and worked on the canal some.

Q. Were you in and over and around those islands and the stream?

A. Yes, sir; we crossed on the old bridge where the dam is now going a-fishing and once in a while we would cross on the islands; used to fish a great deal. I was well acquainted and crossed
383 those islands back and forth. It was not so easy to get onto the island where the Patton and Priest mill now is, but in low water a person could get across there dry-footed sometimes.

Q. Before there were any dams or canals or mills there or anything to interfere with the natural flow of the water in what proportion do you think the water passed down the middle and south channel and north channel?

A. My recollection is that there was as much again water went down the north channel; the main north channel was the north channel; that was the main channel of the river as God made it. There was as much again water came down the north channel as there was in the center channel, and there was again as much water went down the center channel as there was in the south channel.

Cross-examination by Mr. ORDWAY:

Q. What year did you go to Kaukauna?

A. June, 1854.

Q. Was the dam commenced at the time you got there?

A. Yes, sir.

Q. How old was you at that time?

A. I must have been about 23 years old; I am now 57 years old. I must have been about 23 years old, if I remember right.

Q. How much of the Government dam was in when you came there?

A. There was no stoppage of the water. The piers were placed along and some stringers on it when I went to work on the dam. It was a spar dam. I helped put the cribs in. The top stringers were along the dam, but the water flowed mostly through those stringers. There was no gravel or brush or stoppage of the water to amount to anything.

Q. In 1854?

A. No; the water flowed naturally. It was a flat place at the head of the rapids. They commenced at the head of the guard-lock laying cribs and worked towards the south side and then commenced at the south side and worked towards the center. We left a gap somewhere about $\frac{2}{3}$ of the way from the north side over to the south side. We left the gap when we commenced to shut off the water so the water would go through there. I recollect we had an awful time stopping the water. The dam was left lower on that side so that when the water was stopped it run over more on the south side than on the north side or on the guard-lock.

Q. Where was the guard-lock in reference to this dam?

A. Right at the end of the dam on the north side, the old guard-lock up under that bluff.

384 Q. Was not the canal dug at the time you came there in '54?

A. Yes, sir; that sloped wall was made that runs from the foot of the dam down towards the water power. That sloping wall that holds the canal was not done; it was finished that summer.

Q. You call that sloping wall what I call the retaining wall?

A. Yes, sir; it holds the bank of the canal.

Q. That was built before you came?

A. No; it was not finished. They were working on it when I came there. The bank was torn up.

Q. What part of that wall were they working on when you came there?

A. Along down the center; about halfway down.

Q. Was the wall finished up above the dam when you first came there?

A. Yes, sir; the bulkhead or head of the wall was built right at the end of the dam,

Q. Was the guard-lock in when you came there?

A. Yes, sir; I think it was.

Q. Where was that; at the head of the canal?

A. Yes, sir; at the head of the canal, up again- the north side of the *side of the* river.

Q. Was the whole canal dug in the bank right there at the end of the dam?

A. Yes, sir; taken right out of the earth.

Q. Was there a high point of land that came down to the water?

A. Yes, sir.

Q. Was there a large amount of earth taken out there?

A. Yes, sir.

Q. Over against the end of the dam?

A. Yes, sir.

Q. How far downstream did that point of hill—down towards the bend; down the river; this point I speak of; they run the canal through there—how far down did that projection extend?

A. The main part of land projected with a precipice. I should think the highest part of it extended down for 15 or 20 rods.

Q. Down towards the bend?

A. Just around to the left on the north side as you go down the river; around along the bank.

Q. Did you ever see the water at that point in the vicinity of the Government dam when it was at a very high stage?

A. Yes, sir; I have seen it. I came there in June, and I saw it the following spring before the water was let into the canal at all. I saw it at the high stage—that is, the spring stage.

Q. Have you since that time seen the water and observed it in the vicinity of the Government dam when it was a very high stage?

A. Yes, sir.

Q. Have you seen it also and observed it at that locality which would be above the head of Island Number 4 when it was a very low stage?

A. Yes, sir; I have seen it when I could wade across with boots by picking my way.

Q. Where?

A. Across the main channel.

385 Q. At what point?

A. Down pretty well.

Q. What do you mean by down pretty well?

A. Down, for instance, within 20 rods of the iron bridge.

Q. Have you also observed it when it was very low across the middle channel?

A. Yes, sir.

Q. Have you some time in mind that you can put your mind on some particular time when you have noticed the middle channel very low?

A. No; I don't know as I could say a time. I have waded it and drove oxen across it with a wagon many times.

Q. I refer to the middle channel?

A. Yes, sir; before ever there was any dam or improvements there.

Q. Give us about the *the* place, the location of the middle channel.

A. Right above the Meade & Edwards improvements there; the dam.

Q. About how far above their dam do you think you went across?

A. I should say 20 rods.

Q. What was the character; what was the bottom of the middle channel composed of where you crossed it?

A. Rocks, with rolls like a wave.

Q. How wide was the middle channel at the place where you crossed it in feet or rods?

A. I should suppose it was——

Q. As near as you can judge?

A. I should suppose it was about 6 rods after you get off the island unto the rock onto the channel or onto the bed of the river. It was the deepest in the center. When you stepped off the island, then you would go dry-footed until you came to the water. Then until you got on the other side it would be dry.

Q. Over towards Island Number 4?

A. Yes, sir; I should think *I should think* six rods, as near as I could judge, from land to land. In fact, there was not much land on it.

Q. About where that dam stands, the Meade & Edwards?

A. A little above that.

Q. Was this channel wider below the dam?

A. I hardly think it; I think it narrower, if anything.

Q. Below the Meade & Edwards dam?

A. Yes, sir.

Q. You think the original channel was narrower than where the dam stands?

A. Yes, sir.

Q. How was it from this place where you say you crossed, some-

where above the Meade & Edwards dam? How was the channel for width from that place up to the north channel?

A. It widened out; it came out gradually like that. The top of Island Number 4 was rounded.

Q. What was the character of the bottom and what was it composed of up at the mouth?

A. Rock.

Q. Did you know of ledge rock being taken out of the mouth of the middle channel at any time?

A. No; I have never taken any particular notice. There
386 was not at that time, anyway.

Q. What kind of work did you do on the canal?

A. I worked on the locks, putting in locks.

Q. Doing what?

A. Carpenter-work—not carpenter-work—helping put in timbers and planks and raising the locks.

Q. On more than one of the locks?

A. Yes, sir; I think two.

Q. Which two?

A. Whalen's lock, that is down right under the bluff as you go to Grignon's flats—that is, the second lock below—and then the lower lock.

Q. Did you work on the first lock that is there now?

A. Yes, sir; I worked on that lock.

Q. Do carpenter-work on that?

A. Yes, sir; I helped.

Q. Did you work on the guard-lock?

A. No; I never did.

Q. Were the sides of the guard-lock perpendicular, up and down?

A. They were.

Q. What were they made of?

A. Made of stones and veneered with plank.

Q. Can you recollect any particular time you crossed the middle channel before the canal was filled; can you put your mind on any particular time you crossed the middle channel, anything that happened to you that you can remember any particular time?

A. I cannot remember any particular time. I am pretty sure I crossed it in 1855.

Q. The year after you came there?

A. Yes, sir; sure I crossed it.

Q. Did you cross it on foot then?

A. Yes, sir.

Q. What doing?

A. Now, I could not tell you—for curiosity, looking the thing over, fishing, or hunting.

Q. Did you cross always in one place?

A. Generally crossed in one place, about, I should think, 6 or 7 rods above where the Union pulp mill is.

Q. Was that a general trail, where people generally crossed there?

A. Yes, sir; that was the place.

Q. People going over generally went over about that place?

A. Yes, sir.

Q. Why?

A. Because it dropped off; the further you went down there were more holes; in fact, the main channel was that way.

Q. Do you mean it dropped off below the bluff and was rapid water down?

A. Yes, sir.

Q. How did you cross below; how did you get over?

A. Rock on the bottom.

Q. Was you able to get over by stepping upon the top or surface of the stone at that point?

A. Yes, sir.

Q. Without wetting your feet?

A. Some seasons of the year—that is, in low water, but not in high water.

Q. Did you continue on across the south channel also at about that same locality over on the south shore?

A. Yes; or rather above.

387 Q. Where was the usual place of getting across the south channel in those early times?

A. Along near where—in fact, anywhere from where Frambach's mill is now up as high as the bridge across into Ledyard and higher up still.

Q. Which was the widest channel where you crossed on foot?

A. The south channel.

Q. What did you cross on in crossing the south channel?

A. Crossed on the rock bottom, smooth rock, smooth as that carpet almost.

Q. Was it in places, as you went across, uneven, holes down?

A. There were a few rolls, but not so much; it was not so rapid; more spread out; the farther you went down the wider it spread, where it was full of islands.

Q. Did you ever cross that south channel further up?

A. I have waded every foot from the dam away down—that is, where the channel was when the water was high; sometimes it was dry, nothing but a barren rock.

Q. You mean in very low water?

A. Very low water. In medium water it was all the way from four inches to a foot in depth.

Q. In the south channel?

A. Yes, sir; away above all the islands. I mean on the south side of the river, at the mouth of the south channel.

Q. At that time you crossed the north channel also on foot?

A. I have waded when we were making dams. I never made a business of crossing the north channel. I had to wade it building dams.

Q. Whether at such extraordinary low period or stage of water you waded the north channel.

A. Yes, sir.

Q. What depth of water did you find?

A. I never waded across it only when we were building a dam;

we were in where the dam was; we had to wade when we put in the cribs; we were in the water away from the guard-lock away across.

Q. Do you recollect a dam put across from the guard-lock to the head of Island Number 4, a coffer dam, when you was building the canal?

A. No; I don't.

Q. Do you recollect any coffer dam put from the big island over to the north shore?

A. I do, but I can't tell when it was. I have seen it there.

Q. What was that put in there for?

A. I think it was so they could work on the canal below, to run the water off to the south.

Q. When you worked in the north channel in putting in the appliances you speak of in building the dam, have you any recollection of the depth of the water in the north channel?

A. In the summer of '54, when we put that dam in, in some places in the deepest part it was 2½ feet deep, and if you did
388 not happen to step just right you would be pretty apt to go downstream.

Q. Were there holes in the bottom?

A. Yes, sir; it was rough; it was not smooth.

Q. Was the water rapid?

A. Yes, sir; so much so that we used to loose our footing and go downstream.

Q. Were there other places in the north channel where the rock came to the surface of the water?

A. Yes, sir.

Q. Uneven?

A. Yes, sir; appeared to be rocks moved down there; hard-heads; it was uneven, and once in a while there was a big rock stuck out of the water.

Q. In crossing around there you would first step into deep places and again into places that were shallow?

A. Yes, sir.

Q. What became of those big stones in the north channel at that early time?

A. A great many of them were put into those piers, cribs, and a great many of them lay under the dam.

Q. What became of the rock that were in the north channel below the coffer dam that you speak of; what did they do with those stone?

A. They were put into that sloping wall. I think most of them were taken right out of the river there.

Q. Do you know whether there was drift-wood that used to stop, accumulate, run into the middle channel, and sometimes stay there?

A. Yes, sir; I have seen piles of drift-wood in there.

Q. Where?

A. Near Patton and Priest's mill.

Q. Near the dam?

A. Yes, sir.

Q. Below or above the middle-channel dam?

A. Near where the dam is.

Q. Was it narrower there?

A. Yes, sir; as it went down the main channel. I think it was narrower, because there were some little islands, little toe-heads, where the water run here and there.

Q. Divided into smaller channels?

A. Yes, sir; smaller streams; there was one channel at the left, main channel, bigger than the others.

Q. Is not this the way it was there about the Meade & Edwards dam across the middle channel, that it narrowed up there about where the dam is, the water pitched down suddenly right below that dam through narrow and deep and swift channels?

A. Yes, sir; shelves right down.

Q. And they are there today?

A. Yes, sir.

Q. How wide do you think the mouth of the middle channel was where it commenced to pitch down that way just below or just at the present Meade & Edwards dam—how wide just before it divided out into those 2 or 3 other channels where it was narrowest and swiftest?

A. I think about six rods; I should think—I mean from shore to shore, land to land.

Q. How wide, about, was the channel that the water run in swiftest?

389 A. I should think 4 rods, probably, in a general stage of water.

Q. How wide was the south channel where you crossed over near the Badger mill?

A. From six to 10 rods.

Q. How wide do you think the mouth of the south channel is just above the present city bridge which crosses over from Island Number 4 on to the south side, just above, at the head of Island Number 4, you might say?

A. I should call it ten rods.

Redirect examination by Mr. HOOPER:

Q. When you speak of drift-wood in that middle channel, how was that drift-wood laying there, resting on the bottom or catching against the rocks?

A. Catching against the boulders, rocks.

P. V. SMITH, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. I live in Appleton.

Q. Did you ever live at Kaukauna?

A. Yes, sir—that is, I worked there.

Q. When?

A. I commenced working there in the spring of 1851 or probably in the latter part of January.

Q. What doing?

A. I was at work for George Lawe, driving one of his teams.

Q. Ever go around the islands there at Kaukauna?

A. Yes, sir.

Q. How long did you live there from 1851?

A. I was there more than anywhere else for four years or five years, until they got the canal finished. I called it my home here. I had no home, or, that is, I had no family.

Q. You were around the water a good deal?

A. I was around the islands there considerable. I was over in that spring of '51. The half-breeds and Indians Lawe had were making sugar on the big island, and we would go over every Sunday where they were making sugar. I used to go over there fishing with my brother-in-law; he used to take me along to carry the fish, and he came near drowning me once or twice.

Q. Do you know the big island?

A. I know I was on that more than any of the rest.

Q. Do you know the smaller island with the channel running between the two?

A. Yes, sir; I know more than one.

Q. Which was the largest, the channel running between the two islands or the channel over next the Kaukauna side?

A. The one next to the Kaukauna side then was a great deal the largest.

Q. How much larger was that than the middle channel?

A. The width was considerably larger, I should say. You mean after the water gets down to the middle island?

390 Q. After it goes down past the head of the big island it divides and goes down between the islands; how much was it larger on the north side than the one that went down between the two islands? I mean by the north side the one next to the village of Kaukauna then, where Lawe lives.

A. That was considerably the largest; I should say more than as large again.

Q. How did the middle channel and the one that went between the islands compare with the south channel, the one that was south of the big island over next to the flats, Ledyard side?

A. The water was a good deal the most in the little channel; the other was wider channel; from that little island across to the Ledyard shore I remember it as a wider channel, but not nearly so much water running there in low water; what I call low water, that is in the summer time; there is not a great difference, anyway, in this river; there was very little water running in the north side, I guess it is.

Q. Do you mean the Ledyard side?

A. Yes, sir.

Cross-examination by Mr. ORDWAY:

Q. How old are you now?
A. 63.
Q. How old was you in 1851?
A. I will have to figure a little on that, I guess; I was 22 or 23 years old.
Q. What year were you born in?
A. 1827.
Q. How long did you live in Kaukauna at that first time when you went there in 1851?
A. I worked for George Lawe about six months, until they broke ground there to make the canal; there was a company here in Appleton took a job there taking out the two locks, the first two big locks except the guard-lock; they had a job there and they hired me to drive one of the teams; I had charge of the teams; they gave me better wages than Lawe could.
Q. What did the team do?
A. The team hauled dirt and stone.
Q. Stone from where?
A. Out of the canal.
Q. For what purpose?
A. To excavate and to build the walls of the lock.
Q. Were they hauling stone to build a wall along up and down the river from the dam down?
A. That was another job.
Q. Before or after you worked there was that other job?
A. They were all commenced at the same time; John Island had charge of that job.
Q. How long did you live at Kaukauna at that time from the time you went there in 1851 before you went away?
A. I worked there that winter all winter, the winter of '51 and '52, and then the work stopped there.
Q. How long did it stop?
391 A. All but the big company, the one that had the job—Conkey, Lawe and Martin.
Q. How long did that work stop then?
A. I think they had some men there at work; they did not stop entirely.
Q. How long did it stop partially?
A. Oh, a couple of years or a year and a half.
Q. How long did you work then on?
A. I worked on from '51 until they stopped.
Q. Then where did you go?
A. I was up here at Appleton with my brother for some time, but I don't think I was up here a month until I went back and went to work for Hewitt; he kept on finishing up his job.
Q. What did you do?
A. Drove team.
Q. What doing?
A. Excavating.

Q. Where?
A. On the lower level at Kaukauna.
Q. Down below where the mills now are?
A. Just below the mills; we called it the long level, the first level coming up from Green Bay.
Q. Did you ever work for anybody on the upper level—that is, from the Government dam down to the first lock?
A. No.
Q. Did you ever work on that upper level from the dam down to the first lock?
A. Not in building the canal; no, sir.
Q. Did you work and help build the dam; that old Government dam?
A. No, sir; I helped build the bridge before the dam was there.
Q. That was an old bridge across the Fox river?
A. Yes, sir; it was a new one when we got it done.
Q. Where did that stand with reference to the Government dam?
A. Above it.
Q. Above the present Government dam?
A. I don't know whether they have changed it since; I have not been there; I have not been acquainted there for 20 years.
Q. How long did you remain working there for Hewitt?
A. I think I worked for Hewitt for two months, maybe.
Q. That would be in '52?
A. Yes, sir.
Q. Where did you go then when you stopped working for Hewitt?
A. I went to work for Conkey.
Q. Where?
A. We cut a little hay back of the marshes.
Q. How long did you work in cutting hay for Conkey?
A. While there was a chance to cut hay.
Q. Then what did you do?
A. Then I went with Conkey down to the Crouche dam.
Q. Did you ever work at Kaukauna after you went down to the Crouche dam?
A. Yes, sir.
Q. Where did you work next after you worked at the Crouche dam?
A. I took a job building that plank road.
Q. How long did that take you?
A. I worked there——
Q. Six months or a year.
A. I made it my home there that summer mostly, except I would go up and stay with my brother once in a while on a visit.
Q. Where?
A. At Kaukauna.
392 Q. That was the summer of '53?
A. 1852 that must be.
Q. You made your home with West at Kaukauna in the summer of 1852?

A. Yes, sir; and worked, as I told you, for different parties, cutting hay, and then went down to work at the "Crouche" dam.

Q. When did you leave Kaukauna?

A. I left it to go down to the "Crouche" for a month with Conkey.

Q. I mean permanently, when did you go away from Kaukauna?

A. Not for 7 or 8 years.

Q. Was you at Kaukauna when the canal was first filled with water?

A. Yes, sir.

Q. Did they finish the canal before they finished and closed up the dam?

A. Do you mean let the water in?

Q. Yes, sir.

A. No, I should think.

Q. Which was done the last—finishing the dam or working on the canal?

A. I judge, more than I do by my remembrance, that they would not have any water to let in there without having the dam.

Q. Did you ever cross the river from the side of the river where Lawe's house was over onto the island right opposite Lawe's house?

A. Yes, sir.

Q. On foot?

A. No; not onto the big island.

Q. Did you ever cross over from Lawe's side, where his house is over on the island opposite Mr. Lawe's house?

A. No; I never crossed straight across there before the bridge was built.

Q. Was you ever over on that smaller island right opposite Mr. Lawe's house?

A. Yes, sir; I have been on every island there is there.

Q. How did you get onto that island right opposite Lawe's house—that is, Island Number 3, in fact?

A. You mean the first big island?

Q. Right opposite Lawe's house. It is a large island.

A. I got on there with a canoe, from above.

Q. Up above the dam?

A. Up on level water, above the rapids.

Q. Above the Government dam?

A. Yes, sir.

Q. Came down before the dam was built?

A. Yes, sir.

Q. In a canoe?

A. Yes, sir.

Q. And got on in that way on the island?

A. That is the only way you could get on there.

Q. Did you ever go across from that island right opposite Lawe's house across over on the big island; do you know any difference between the big island and one lying right below it—Island Number 3?

A. There is a difference in them.

Q. Do you know what they are called?

A. No.

Q. Was there a stream of water which ran between the two islands?

A. Yes, sir.

Q. Do you recollect distinctly?

A. Yes, sir.

Q. Did you ever cross that stream between the two islands?

A. Yes, sir; I have crossed it in low water.

Q. Where?

393 A. Down between the islands there.

Q. How far downstream, towards the lower end of the islands or up towards the upper end of the stream?

A. I have been through that channel, I think.

Q. On foot?

A. On foot, I think. I am not certain about that. I know we used to wade around there working.

Q. Did you ever go over the big island onto the Ledyard side?

A. Yes, sir.

Q. On foot from the big island onto the Ledyard side?

A. I have been over from the Ledyard side onto the little island. I had to go there to get this timber off I speak of.

Q. Which island?

A. The little island—the smaller island than the big one. The big island divides the channel, and then the next island still divides the other channel, and that is the island—that is the point where the lumber was fastened on; it floated there.

Q. From where?

A. Up at Appleton, here.

Q. What kind of lumber was it?

A. Fine lumber—pine boards, plank, and such things.

Q. How did you get over from the smaller islands onto the big islands when you say you crossed that middle channel; what did you cross on?

A. I waded in the water when I went across there.

Q. Have you any recollection of wading in the water?

A. Yes, sir; I waded there a great many times.

Q. Do you recollect any particular time?

A. No; not any particular one.

Q. How far is it across that channel you went across between the two islands?

A. It is, as I remember it, twice as wide as across the street here.

Q. How many feet across?

A. As I remember, this street is 60 feet across.

Q. How far across was the other channel from the island over to the Ledyard side?

A. I should think it was at least ⅓ wider across; maybe as much as that.

Q. Have you any recollection of how high the water came up on your feet or legs when you crossed over on this channel between the two islands?

A. I think in that channel it was up around my waist.
Q. What makes you think so?
A. Because that was a deep channel; that was the worst channel to cross—to get into.
Q. Was it the narrowest channel?
A. It was the deepest water and the roughest. We were more fraid of getting lost there.
Q. Ever see flood-wood lodged in there in that channel?
A. Yes, sir; I think so. This lumber was lodged in there.
Q. How far down the channel below its mouth was the lumber lodged?
394 A. This lumber was right in the head of the Island 3 or 4 cribs.
Q. On the head of the smaller islands?
A. Yes, sir.
Q. Lower islands?
A. Smaller islands; that was in May, probably, of 1851.
Q. How far out into the middle channel did those cribs stick out or extend?
A. I don't remember that; they were not rafted like a Wisconsin raft, but so that when they crossed it it knocked them out of shape.
Q. Was it up high and dry on the point of the island?
A. No; it was hung there; the water was high then.
Q. Had not the water been so high that it flooded the lumber up pretty well onto the head of the island?
A. We got it off next day after it got there.
Q. Which channel did you float it down?
A. It went down this middle channel; we tried to get it the other way and could not.
Q. What shape did it go in?
A. It went in pieces. We could not handle it as soon as it got loose; we let it go and caught it down on the level below.
Q. Down in slack water?
A. Yes, sir.

By Mr. CARY:

Q. That was the time the water was up around your waist?
A. It was; then I did not go; you could not wade across that middle channel at that time; it was later in the summer when we fished there.
Q. Why could you not wade across it at that time?
A. It was too high.
Q. Because it was so very swift?
A. Yes, sir.
Q. You could have walked across there so far as the depth of water —?
A. It might not have gone over your head, only so high it took you off your feet. This south channel—all the way we got on this island to get this lumber off was to take a canoe across the river. We could not handle a canoe in that swift water; we took our

pikes and steadied ourselves and waded from the shore on to the island.

Q. Across the south channel?

A. Yes, sir.

Q. When you got to the middle channel it was so swift you could not wade that?

A. We did not want to; we could not have done it. We did not want to go any farther; we got the lumber off and went back again.

Q. Was there a great heft of water running in the whole river at that time—was it a very high stage of water?

A. I guess it was a good stage of water.

Q. What month was it?

A. I think it was in May.

Q. What time in the year was the water highest?

A. I should say that was about the time.

Q. Was there a periodical flood there every year—high water?

395 A. Yes, sir; it was the highest in the spring.

Q. Was there a corresponding high period of water in the fall, do you know?

A. There was when we had heavy rains.

Q. Have you any recollection of any spring and fall floods, so called?

A. None in particular.

Q. Was there not usually a spring flood—spring high water?

A. Yes, sir.

Q. It was at that time you are speaking of that you got this lumber off?

A. Yes, sir; that was high water, we called it.

Q. Was there not a great flood of water passed down that Ledyard channel at that time?

A. Yes, sir; there was water there.

Q. A great flood of water?

A. It was up to my middle.

Q. Did you ever see boats larger than canoes passing up and down in any of these channels from slack water below up towards Menasha?

A. No; I never saw them going through. I have heard of their going. That was the only channel they could get up.

Q. Which one?

A. The south channel. It was too swift—too much flow in the other channels.

Q. Where was the principal fall where it jumped right down in the other channel—above or below Lawe's house—in the north channel?

A. It fell very fast, but I think the main—the roughest-looking place was just below his house; if I remember, right where the turn is.

Q. Where was the sharpest fall and roughest-looking place, as you speak of it, in this middle channel between the two islands?

A. There was where we called "dead man's" holes down below that.

Q. At the foot?

A. Yes; down towards the foot; there was — half-breed with me getting that lumber off; he said we must be very careful; he would not follow the lumber down through that hole. They were afraid of getting lost down through there—that is, the middle channel; there is a fall down there.

Q. Did you ever cross the whole river on foot up above all the islands—up near where the dam is?

A. No.

Q. Did you ever cross that south channel—Ledyard channel—on foot up near its mouth, near the head of the upper islands?

A. I have crossed; oh, yes; above the little island.

Q. Above all the islands?

A. No; I have got that little island down below considerably the head of the big island in my head.

Q. I am asking you if you ever crossed the south channel, or Ledyard channel, on foot up just at the head of the big island, at its mouth, the main south channel.

A. I think I have.

Q. When?

A. Through the course of that summer or the next summer.

396 Q. Have you any recollection of any certain time?

A. Not any particular time. I remember I walked around there on the stone.

Q. How far across is that mouth? How wide is it?

A. I would not undertake to say, it is so long ago.

Q. What is your present business?

A. Farming.

Q. What was your business after you finished working out for Hewitt and these gentlemen and this man you have spoken of on the improvement? What business did you settle down to?

A. I drove team. I worked 14 years by the month.

Q. From 1851?

A. From '47, and then my brother and I went into butchering business here in Appleton.

Q. How long did you remain in that business?

A. That year, I think. We commenced the fall of '58, and I think we sold out to Judge Harriman and some parties in '66 or '67.

MICHAEL MULLONEY, a witness for the plaintiff, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. Kaukauna.

Q. How long have you lived there?

A. I have been in the town since 1851.

Q. What is your business?

A. Farming and laboring man.
Q. Where is your farm?
A. About a mile and a half from the Northwestern depot, north.
Q. On the bank of the river?
A. No; about a mile and a half. I worked on the old canal.
Q. Did you live in the village of Kaukauna?
A. I lived in the village of Kaukauna 4 or 5 years.
Q. Were you there when the improvement company was building the canal?
A. They were building. They started in in June and I came in the fall.
Q. What year was that?
A. 1851.
Q. Did you use to be around the river a good deal?
A. Yes, sir; I worked on the river and improvements.
Q. Over the islands, were you?
A. Yes, sir.
Q. Before there was any dam above the islands how much of the water of the river ran on the south side of the big islands, the upper islands, in an average stage of water in the summer?
A. Not a great deal on the south side.
Q. What measure should you say, $\frac{1}{4}$, $\frac{1}{7}$, $\frac{1}{2}$, $\frac{1}{3}$; how much?
A. As near as I can remember, as much as $\frac{2}{3}$ and more went on the north side.
Q. Do you know what they call the middle channel, which runs between the islands?
A. Yes; I crossed it.
Q. Was that larger or smaller channel than the south channel up at the head of the island?
A. It was larger at the mouth where it took in the water.
397 Q. Did it carry more or less water than the south channel?
A. A little more, I should judge.
Q. There was a north channel that run north of the small islands?
A. That is the middle channel.
Q. The middle channel is the one that runs between the islands?
A. Yes, sir.
Q. That is the one you say is a little larger than the south channel?
A. Yes, sir.
Q. How was the north channel?
A. The heft of the water went there.
Q. How much bigger was that than the middle channel?
A. It had the heft of the water and it was deeper, and we did not dare to cross that at all at no time, and the south channel, I often went through it in a low stage of water. There was no water there at all except in crevices and holes. I have often gone through it and not wet the tops of my boots in a low stage of water.
Q. Between the middle channel and the north channel—how much bigger was the north channel than the middle channel? I don't

mean the width. How much more water did the north channel carry than the south channel?

A. I think it took more than ⅔ of the water, the north channel, to the best of my ability.

Q. After it went down below the middle channel?

A. Yes, sir.

Cross-examination by Mr. ORDWAY:

Q. How old are you now?

A. I am about 69. I look older than that, but I think that is about as close as I can hit it.

Q. What kind of work did you do on the dam or canal when it was being built?

A. I teamed.

Q. On the canal?

A. I quarried or broke stone. I was working at the dam from the commencement until it was finished.

Q. When was it finished?

A. I am no scholar; I cannot tell the dates.

Q. How many years was it from the time it was commenced until it was finished—the dam?

A. I could not tell you that even, because it was stopping and going on with the company. Every little while there would be some kick-up and the company would quit.

Q. Was you a married man then?

A. Yes, sir.

Q. Where did you say you lived when you was working on the dam?

A. I lived there in the village. Now they call it a city.

Q. How far from the dam?

A. Probably a couple hundred yards; right north of it, up on the hill.

Q. Q. Near where the post-office is now?

A. Where Priest's house is built; that is where my shanty was built.

Q. Pretty near where the post-office is now?

A. No, sir; it was right close to Frambach's house; northeast of it.

398 Q. How many years did you live there then?

A. Five or six, until I went in on the farm.

Q. What kind of work did you do on the canal?

A. I quarried and broke stone or helped lay stone; then they took me off there. I helped to put in the dam; floated down rocks there from above the dam.

Q. What was the man's name you worked for?

A. He is dead. His name was McNeil; foreman building the dam.

Q. Did you work in digging out clay?

A. Yes, sir, I did my part of every kind of work.

Q. Shovel?

A. Shoveling, quarrying, and working in the water.

Q. Do you recollect whether all the canal was taken out of the land right there against that north end of the Government dam; do you recollect whether the canal was dug out right up to and down by the end of the dam?

A. The north side of the canal, it was taken off. The masons were building the solid wall and the wagons were hauling in the dirt as fast as they raised the wall and banking it up.

Q. Was there a large hill coming down to the shore to about where the end of the dam is?

A. Yes, sir; it is very high.

Q. Was the canal cut into the hill land there or point of that hill?

A. There was a slope; they took the dirt where the hill was sharp.

Q. Did they take a large amount of dirt out of that slope at the end of the dam?

A. They took the dirt along down from the point of the dam down to where the mills are; they deepened the canal as they went along and put in the wall.

Q. Was the wall up close to the shore?

A. No; they built it out in the river and banked the dirt right up against it.

Q. Did they do so right up at the end of the dam?

A. Yes, sir; up where the guard-lock was.

Q. Did they build the end of the dam right flush up on the bank?

A. Yes, sir.

Q. Were there any houses over on the south side where Ledyard now is?

A. No, sir; not only farmers.

Q. How many?

A. Only one; right by the river.

Q. Where did that stand, close up where the dam now is?

A. Pretty near; a little above; about the foot of the dam; it is there now; the first house was a frame house.

Q. Was there any house over on that side besides that one?

A. There was one up on the hill.

Q. Was there any further downstream, near the Badger mill?

A. There was a man named David Beaulieu.

Q. You know where he lived?

A. Yes, sir.

Q. Was you ever at his house?

A. Yes, sir.

Q. Did you ever see the river there when it was very high
399 in the spring before the dam was built?

A. Yes, sir; I saw it in a stage of high water and low water. I brought three bags of corn to the grist-mill and it took very nearly until night to get it ground.

Q. Whereabouts did you use to cross the river to get over there?

A. George Lawe built a bridge.

Q. About where?
A. Above the old dam.
Q. Above the dam where it is now?
A. Yes, sir.
Q. What year did George Lawe build that bridge; did he build it before the first dam was built?
A. Yes, sir.
Q. He built it before you came there?
A. It was built just as I came there.
Q. That one from the north bank over to the south bank?
A. Yes, sir.
Q. Did you ever go across from George Lawe's house across the north channel over onto that?
A. No, sir; there was not a house in Appleton.
Q. Was you over on that island just in front of George Lawe's house?
A. I was. I went in from the south side.
Q. How many times?
A. Several times; more than I can remember now.
Q. What was you over there for?
A. Hunting pigeons, deer, and fishing—one thing and another.
Q. Did you ever see deer on that island opposite Lawe's house?
A. I did.
Q. When was the first time anybody had a house on that island you know of?
A. I forget the date. I guess the first house was there when they commenced to build the mills there.
Q. Was anybody living on these islands in those days at the time you speak of?
A. Not in those days.
Q. Whereabouts did you get across the south channel to get over there?
A. I got across the south channel most any place in those days. It was not over the upper part of the boots.
Q. How wide was the south channel between the banks?
A. Not very wide.
Q. The south channel?
A. I could not really tell you; probably 3 rods wide.
Q. You never measured it?
A. No, sir.
Q. Did you ever go across that south channel up near the mouth of it?
A. Yes, sir; where the water used to go down; where the water was divided in there. I crossed it all along just as it happened.
Q. You remember distinctly of crossing?
A. Yes, sir.
Q. How high up on you did the water come up?
A. The highest time it never came over the tops of my boots. I did not dare to go into the middle place at that time.
Q. How wide was the middle channel between the two islands?
A. It was a good deal wider than the south channel.

Q. Between the banks?

A. Yes, sir; where the water was.

400 Q. Do you kuow where the Meade & Edwards dam is across the middle channel?

A. Yes, sir.

Q. Did you help build that?

A. No, sir.

Q. Where did you live when that was built?

A. Out on the farm.

Q. How far out from Kaukauna?

A. A mile and a half, but I was in every other day or week, sure.

Q. How much wider was the middle channel than the south channel?

A. It was, maybe, a couple of rods wider; probably more; I never measured it.

Q. You never crossed that on foot?

A. Yes, sir; in a low stage of water.

Q. In what place?

A. Just up at the mouth of it and down below; just where the other little islands separate the water here and there.

Q. Are you sure you crossed it up at the mouth?

A. Yes, sir.

Q. How high up on your person did the water come?

A. I never went in it only at a low stage of water.

Q. Did you not cross it dry-shod by stepping on the stones up at the mouth?

A. I never crossed only in a low stage of water, when the water did not pass my boot-tops.

Q. Any other place up above the mouth or down below?

A. No.

Q. How did the water run down the middle channel, still?

A. It ran down swift in the middle channel; there is quite a fall there.

Q. Which part of it?

A. Down the lower end of it; it ran swifter there than at the mouth.

Q. The water fell down?

A. The water would go down the channel.

Q. Was that rapid below where the dam now is?

A. Yes, sir.

Q. Across the Meade & Edwards dam, where the Union pulp mill is?

A. Yes, sir; below that, if I understand it; this dam that keeps the water back from getting in the main channel.

Q. What I want to know is if the place where the middle channel was the swiftest ran down as if down a ledge.

A. I do not understand about the middle channel.

Q. You have been telling us about the middle channel, between the two islands where there are 3 mills.

A. You mean that dam?

Q. Did you ever cross that channel?

A. Yes, sir; at the upper end of it, where the water parted.

Q. At the mouth?

A. Yes, sir; where it turned over to the big channel.

Q. Did you ever cross the middle channel below where the Meade & Edwards dam is?

A. No.

Q. Did you ever cross it about where the dam is?

A. No, sir.

Q. Did you ever cross it anywhere else except at the mouth?

A. Right at the mouth the rocks stood up level, and I thought it was the surest footing.

401 Q. You never crossed that middle channel except at the mouth?

A. Only at the mouth. I saw the rock- were level and I thought it was the surest footing; more than below where I could see them.

Q. Did you ever see anybody else cross that middle channel?

A. I might have seen them from the shore; I could not tell you.

Q. Do you remember of seeing some people cross that middle channel?

A. Yes, sir.

Q. Who?

A. I could not tell you.

Q. What time was it in?

A. In summer some time.

Q. Was it before the Government dam was built?

A. No; after.

Q. Did you ever cross the south channel up at its mouth above where the bridge now is; the Ledyard side of the channel?

A. I could cross in there most any time.

Q. Did you ever cross in there?

A. I crossed it just where the water separates in from the land.

Q. At the head of the big island?

A. No; it was the small island; what I call the small island laid between the south channel and the middle channel, and then we called the big island the lower one where the main water was going around; the heft of the water as we called it.

Q. Did you ever measure either of those channels for width?

A. No, sir; I had no interest in measuring.

Q. When was your attention first called to the size of those channels?

A. It was only just like that; according to my own judgment, I always looked at the middle channel to be larger than the south one.

Q. When was your attention first called now lately to the size of those channels?

A. You have to talk very plain to me; I am a man with no education; I don't want to answer anything until I understand it.

Q. How long ago did somebody first speak to you about what your recollection was about those channels?

A. I don't remember; several people may have talked to me in that way in these last 15 years and I think nothing about it.

Q. You know Mr. Priest?
A. Yes, sir.
Q. You know Mr. Patton?
A. Yes, sir; by sight, but I never spoke to him that I know of.
Q. Who asked you to come down here?
A. Priest.
Q. When was it that Priest first spoke to you about the size of these channels?
A. Two or 3 weeks ago; maybe less.
Q. Did you go and look over the channels?
A. No, sir: I did not need to.
Q. Did you go and look at them?
A. No, sir.
Q. When was you last over those channels?
A. I did not go over these channels in 8 or 9 years.
402 Q. How near is the nearest you have been to them in the last 8 or 9 years?
A. I have been near them; I have traveled on the public road.
Q. Across those bridges in the last few years?
A. Yes, sir; I crossed one of them yesterday.
Q. Recently?
A. Yes, sir.
Q. Have you been down to see those channels since Priest spoke to you about it?
A. No, sir.
Q. Did some one besides Priest ask you later about the size of the channels?
A. No, sir.
Q. How long before Mr. Priest spoke to you about it had you had any occasion to think about the size of those channels?
A. I never had any occasion since the time I used to be crossing it in old times.
Q. No business called it to your attention?
A. No, sir; no business.
Q. Did you ever see any boats of any kind passing up and down the Ledyard channel, the south channel?
A. Yes, sir; I helped to shove a scow up there once; it got up in the dam, and the boss sent after it with a lot of men, and they were not able to fetch it up until McNeil sent a party of us men, and then sometimes is scratched on the rocks.
Q. When was that?
A. Some time in the summer.
Q. Did you work on the dam or canal in the winter?
A. Yes, sir; every winter that they worked on it.
Q. Was the water running when you was working on the canal in the north channel?
A. Yes, sir; all the time, because it was a spar dam they built, until they got it graveled up, and there was more or less leakage. I saw the last two or three winters there was not a drop going over the dam, but leakage came through.
Q. How did they manage to build the retaining wall from the

dams down to the mills; how did they manage to build that wall along in the edge of the water?

A. They built it in the winter and summer.

Q. Did they build it while the water was in the channel?

A. Yes, sir; the water did not bother them any; they kept hauling in dirt into the canal as they raised the wall.

Q. Where did they get the stone?

A. Got them all over; quarried them from the flats and hauled them with sleighs and wagons.

Q. Was there any dam put across from the big island over to the north side to keep the water out of the north channel?

A. There might have been a coffer dam; I don't remember.

Q. Was there a dam from the head of Island Number 4 over to the north shore landing, near where the Government dam now lands?

403 A. No; I did not see it, to the best of my knowledge; there may have been; my memory is not good.

Q. Was there a dam there that you remember of from the head of the big island over to the north shore?

A. No; I don't think they could keep a coffer dam there those days with the heft of the water going in the north channel.

Q. Did you ever go across from George Lawe's house over onto the island opposite to his house on foot?

A. No, sir; no living man could cross there on foot.

Q. At no time.

A. At no time.

Q. Not in low water?

A. To the best of my knowledge there is no man could cross there unless he had a pike pole or something to steady him.

Q. Did you ever see anybody go across there on foot?

A. No.

O. G. LORD, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. Kaukauna.

Q. How long have you lived there?

A. Since the 15th of March, '72.

Q. What is your business?

A. Practicing medicine.

Q. Have you been across and about the islands at Kaukauna and channels at Kaukauna?

A. Yes, sir.

Q. How often?

A. Very often; every day, more or less—that is, along the public highway.

Q. Do you know what they call the middle channel there that feeds the Meade & Edwards power?

A. Yes, sir.

Q. And the south channel is the one we call the south channel that goes south of the big island, the upper island?

A. Yes, sir.

Q. How did those two channels compare in amount of water they carried in an ordinary stage of the river before there were any improvements on the middle channel?

A. I will tell you how that is; when I came to Kaukauna there was a coffer dam across that middle channel, just from the head of the island over to the south island or large island; there had been some stone quarried out there about that time, and there was a coffer dam in there, and I am unable to say much about that; I know in high water there was lots of water went down there; I am inclined to think that that coffer dam staid in there perhaps 3 or 4 years after my first coming there; I cannot say much as to how that channel was in its natural and original condition, for this coffer dam was in there when I came there.

Q. After that coffer dam was taken out?

404 A. I cannot say about that, for I don't know how long that coffer dam was taken out before they began their improvements in building this Meade & Edwards canal; I am unable to say very much about that.

Q. How, in your judgment, did the flow of the water in the north and south channel up at the head of the big island compare?

A. Well, I should not think that in the ordinary stage of water that there was one-sixth part of it went down the south channel.

Cross-examination by Mr. ORDWAY:

Q. Do you know how wide the river is at the dam?

A. No, sir.

Q. You know how wide the north channel is?

A. No, sir. I know how long the bridge is across it there. That is 228 feet long, and it is filled up about 40 feet at one end. Well, from the canal bank across the river there it is about 300 feet.

Q. Where the city bridge is now?

A. Just above there.

Q. That is the locality you refer to?

A. Yes, sir.

Q. Do you know how wide the north channel is up above that at the head of the big island?

A. No, sir; I know nothing about it, only by comparing it.

Q. Never had it measured?

A. No, sir.

Q. Do you know how wide the south channel is at the head of the big island?

A. No, sir.

Q. What is your business?

A. Practicing medicine; a physician.

Q. Your age is how much?

A. 45.

Q. I suppose you have crossed those bridges often?

A. Yes, sir; and I have crossed the river. I have forded the river many times.

Q. Did you ever cross the bridge now in existence from the big island over onto the Ledyard side near the mouth of the south channel?

A. Yes, sir; I have crossed the channel also.

Q. Was there another bridge there before this one now in existence?

A. Yes, sir.

Q. Did you ever cross that old bridge?

A. Yes, sir.

Q. Do you recollect anything about the flow of the water which went down the south channel—down under that bridge—the appearance of it?

A. Yes, sir.

Q. About what was the appearance?

A. I used to cross the bridge—go across the iron bridge—ford the river, and go out where the Badger mill is—that is, when I went in the direction of Hollandtown; that was my direction. I travelled that river more often than I did the bridge.

Q. Did you ever pass over there on foot—the place you speak of?

A. Yes, sir.

Q. Often?

A. Yes, sir.

Q. Was there any kind of bridge across the south channel there?

A. There was one time.

405 Q. Did you ever cross this place you speak of without the assistance of a bridge?

A. Yes, sir.

Q. Could you go over there dry-shod?

A. I would not say that. I think there was always some water running down there.

Q. Was the bottom uneven and some of the stone high and so, by reason of that, you could step from stone to stone and keep very nearly dry?

A. That was so in some places along there. In some places were stone that were washed down and in other places it was smooth.

Q. In the vicinity of the present Badger mill?

A. Yes, sir.

Q. Have you any idea how wide the channel was there at that place you crossed?

A. In high water it was from bank to bank, and as the water went down it was narrower.

Q. Did you ever cross from this big island—we call it 4—there is a little channel running down and partly divides between 3 and 4, and there is the Meade & Edwards channel—did you ever cross that channel?

A. Yes, sir.

Q. On foot?

A. Yes, sir.

Q. Before Meade & Edwards put their dam in?

A. Yes, sir.

—. ——.

A. No; I guess not; I do not think I have.

Q. Was there any usual place of crossing that channel?

A. I used to vary. Sometimes I went just below where this coffer dam was in across the river.

Q. How far was that below the mouth of the middle channel?

A. It was right at the mouth.

Q. Just a little in the mouth or right plum- out so as to make a straight line?

A. Just at the mouth of the channel.

Q. Extending clear across the mouth of the middle channel?

A. Yes, sir.

Q. What was it in there for?

A. For the purpose of quarrying stone below.

Q. That was in what years?

A. That dam was in there when I came in '72 and it remained there some time; I don't know how long.

Q. What was the effect of that dam across the mouth of the middle channel upon the water of the whole river?

A. It stopped the water from going down the middle channel.

Q. Sent it down the north channel?

A. Yes, sir.

Q. Do you know who was quarrying stone there?

A. Yes, sir; a man named Smith.

Q. For what purpose?

A. I think some of those stone went down to Appleton for some purpose of making a blast furnace.

Q. A. L. Smith?

A. No; Barbaer Smith.

Q. A man connected with the furnace?

A. He was sort of a jobber who used to get out stone and timber; took hold of any such jobs.

Q. Do you know where there is a foot-bridge across that middle channel now near its mouth? I am not certain it is there now.

406 A. I have seen them drive across there with teams.

Q. Was there more than a foot-bridge across the middle channel?

A. Yes, sir; a good substantial bridge.

Q. Running from one island to the other?

A. Yes, sir; from the island over to the dam to the foot of this Meade & Edwards' canal.

Q. That is over Island Number 3?

A. It is not exactly over Island Number 3. It is from the bank of the canal, then built over to the other island. In building that canal they cut off one channel there.

Q. Kind of a side channel?

A. Yes, sir; it ran down by the slaughter-house.

Q. Do you recollect whether there is a bridge across from Island

Number 3 onto the south side of the Meade & Edwards present improved channel?

A. Yes, sir.

Q. About how long has that been there, do you remember?

A. That has been there—I do not think more than 6 or 7 years.

Q. Do you know how wide or about how wide the middle channel was in 1872, before Meade & Edwards improved it; have you any recollection?

A. I know very nearly how it looked, but there was a great flood of water going down there at that time on account of this coffer dam.

Q. About how long did that coffer dam remain in?

A. I think it was there from 3 to 5 years—that is, after I came there. I am sure it was in 3 years after I came there.

Q. Did it remain there until after Meade & Edwards commenced improving their channel?

A. It may be, but I am not positive about that, but close up to that time.

Q. Did you ever attempt to ford the river from the neighborhood of the present big stone paper mill there across onto Island 3?

A. No, sir.

Q. Did you ever ford the river there on foot or on horseback from the neighborhood of the Gus Smith mill over onto Island 4?

A. No, sir.

Q. The red mill right at the end of the bridge onto Island 4?

A. No, sir.

Q. Did you ever see the water out of the north channel, pretty much out of it?

A. I have seen it pretty low.

Q. Did you ever see the water at a stage when it did not run over the Government dam?

A. Yes, sir.

Q. How far back?

A. This winter.

Q. In '72?

A. The Government dam was not in there in '72.

Q. You mean the present dam?

A. It was not in in '72.

Q. There was a dam in there in '72?

A. It was not the Government dam.

Q. There was a dam?

A. Yes, sir.

Q. Away back how near to '72? How far can you remem-
407 ber the water being so low it did not run over that dam?

A. Well, that old dam that was in there was very open and whenever the water was low it did not use to run over it.

Q. When it was the lowest and did not run over it, but run through the dam, how much of a flow of water was there down the north channel? Was there much water? When the water was low and did not run over the dam, but run through the dam, how much of a flow of water did there appear to be down the north channel?

A. About $\frac{5}{6}$ of the water. I cannot tell you how much water runs down the river. I have no means of knowing that.

Q. I did not mean to ask you that, but if you noticed whether it was apparently a strong flow of water down the channel or a light and shallow flow when the water was low.

A. I do not think there was as much run down when it was low as there was when it was naturally high.

Q. Do you think a man would readily ford the north channel at a low stage?

A. I think he could sometimes.

Q. Was your attention ever called since 1872 to the flow of water down any of these channels by any one for any purpose whatever until the commencement of this suit?

A. No, sir.

Q. How long since was your attention first called to the subject of the flow of the water?

A. Mr. Brothers spoke to me 3 or 4 years ago. He wanted me to go to Appleton.

Q. Did Brothers ask you to go down to Appleton as a witness in this suit?

A. Yes, sir.

Q. Did you thereupon observe, go and take a look at the river?

A. No, sir.

Q. Have not since the time he spoke to you?

A. No, sir.

Q. Not with reference to the testimony you have given?

A. No, sir.

Q. Can you give us any idea how wide that middle channel was below the coffer dam, was in 1872; just below where you say the Government dam went across?

A. I should think that it was somewhere about 150 or 75 feet wide.

Q. How wide do you think the south channel is at about where the iron bridge crosses now from bank to bank?

A. That channel is about 250 feet.

By Mr. CARY:

Q. How long is it since there has been any flow of water down the south channel from the river; any substantial flow?

A. Since the time they put that coffer dam in; that temporary dam.

Q. When did they do that?

A. That was done 7 or 8 or 9 years ago.

Q. Was that the dam that runs from near the head of Island Number 4 up to the south bank of the river?

408 A. Yes, sir.

Q. That cuts off the flow of the river from the south channel?

A. Yes, sir.

Q. Since that time there has been no flow of the river except what might come through leakage and tail race?

A. Yes, sir.

PETER RADEMACHER, a witness for the plaintiff, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?
A. In Kaukauna.
Q. How long have you lived there?
A. I lived there steady; I came there about '51; I cannot tell exactly the month—the time the building was finished that they commenced on the canal.
Q. Before they built any dam?
A. Yes, sir; there was no dam there.
Q. Lived there ever since?
A. No; I moved off once for two years at Fond du Lac.
Q. What is your business?
A. Farmer.
Q. Where is your farm?
A. About a mile and a half from the river.
Q. How long have you lived on the farm?
A. I live there today.
Q. Did you live on the farm when you first came there?
A. Yes, sir.
Q. Same farm?
A. No; I bought a farm in what they call Bucannan on the bank of the river; I sold that farm and bought on this side of the river.
Q. Did you know the river where it passes the island at Kaukauna before there was any dam built there?
A. Yes, sir.
Q. Were you on these islands?
A. Yes, sir.
Q. How often—how much?
A. Sometimes; I could not say how often; sometimes the cows got down there and I went there to get them.
Q. You used to have to go on them to get the cattle?
A. Sometimes, and occasionally I went on the flat; there was nobody living there, and sometimes the horses went on.
Q. When there was a summer stage of water, just a fair low stage of water, what part of the water do you think went on the north side of the big island and what part went on the south side?
A. I do not think there was so much on the south side.
Q. What fraction?
A. That is a question I can hardly answer; I think if you took it altogether might be a little more or might be a little less—might be $\frac{1}{5}$ and $\frac{5}{6}$—it might be more; sometimes when it was low there was hardly any water in it.
Q. When high there was more water in it?
A. Yes, sir.
Q. Do you know that middle channel between the two islands?
A. Yes, sir.
Q. Was there as much water went in that as there was in the south channel?

A. I told you I crossed it a couple of times; it was kind
409 of flat; it was spread out more than the south chan- the time I went across; I think there was six or seven inches in it running swifter there than on the south side.

Q. Do you think there was as much water there as there was on the south side?

A. I should think there was about the same; I could not say very definitely; that is a thing a man would not take particular notice of; might be more or less.

Cross-examination by Mr. CARY:

Q. How old are you?
A. 77 this fall.
Q. How wide was this middle channel?
A. I could not tell you.
Q. About how wide?
A. The time I went over there there was another channel on this side; it was spread; it generally was smooth rock; there is another little channel down below we crossed.
Q. This channel between the 2 islands, how wide was that?
A. I could not tell you.
Q. Was it 20 feet?
A. More.
Q. 30 feet?
A. Yes, sir.
Q. How wide, about?
A. I could not say how wide; I could not hardly estimate.
Q. 40 feet wide?
A. I think more.
Q. Was it over 50 feet?
A. Yes, sir.
Q. Was it over 100 feet, this middle channel?
A. I think that is about what it would be—100 feet and more, too.
Q. How wide was the south channel between the big island and the south shore?
A. It was not so wide.
Q. The south channel was not so wide as the middle?
A. No.
Q. That was not over 50 feet wide?
A. I think it was more.
Q. How wide?
A. I never measured it.
Q. About how wide?
A. I could not tell you; I never measured it.
Q. You think the middle channel was 100 feet?
A. I said that came about it.
Q. Was the south channel as wide as the other?
A. No; it was not as wide.

A. C. BLACK, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. In the city of Kaukauna.

Q. How long have you lived there in the city where the city now is?

A. I came there in '50—that is, to settle there—but I have been there—off a little spell—since June, '46. I have been all over those places.

Q. Did you settle where you now are?

A. Yes, sir.

Q. How far is that from the Government dam?

A. Something like a half a mile; might be a little more.

Q. Were you acquainted with the islands and with the streams running between the islands each side of the islands at Kaukauna before there was any dam above the islands?

410 A. Yes, sir; we went on there to see what we could find. We searched around; we were in hopes to find mineral there.

Q. Prospecting?

A. Yes, sir.

Q. A good deal?

A. Quite a bit. There was old man Hewitt, of Menasha—he was there—and a young fellow—a brother-in-law—named Bland. He is in Texas now. He and I were single, and there was another young fellow, and Sundays and days we were idle we would go together on the islands—go cruising—thinking we would find something. That was the time of the California gold-mine fever. We all had the gold fever.

Q. Did you get pretty well acquainted with these channels?

A. Yes, sir; tolerably well acquainted with them.

Q. At different stages of water?

A. That was the time we were on there more than any time: no use to go on when the water was up.

Q. What season was it when you was on the islands?

A. Summer season. It was in the spring when Bland was with us; he was not there in the summer time.

Q. In your judgment what fractional part of the water of the river, at an ordinary stage, run south of the big island?

A. That is a very hard question to answer. I have seen that south channel as dry as this floor, except little veins of water running in crevices of the rock at a very dry time, but at usually dry times. As you as- the question, we generally crossed on that, so that I never got my feet wet. That was on rock. I wore boots in those days. We could get across on the stones: there were more or less stones. We could cross on that. We did not calculate to go when we got our feet wet. I never attempted to cross the big channel at any stage of water. I saw a man named Hawley, who built the first saw-mill; I saw him cross with a pike pole in August, when the water was very low. Hewitt had a big team; he hired that

team and they drew out these saw-logs; I think they drew out over 20,000 feet of lumber. They crossed a little ways below where this present bridge is; quite a little piece below where the shallowest place is. He had a good iron pike to cross there.

Q. Did he have a pretty stiff job getting across?

A. Yes, sir; he did. He was a tall man and very muscular limbs and very wiry. He had his clothes up so nothing could catch on to take him down; had to keep his toes up the stream and
411 walk sideways and picked right down to move up. I would not undertake to cross there for all those islands.

Q. Was there twice as much water running in the north of the island as south?

A. In a common stage of water there was probably in the neighborhood of 6 or 7 times as much in the north channel as there was in that, and in a very low stage of water you may say it was all in the north channel; when it was extremely low.

Q. When the bed rock was substantially bare in the south channel how much of a stream was there in the north channel—how deep?

A. There was a heavy stream, so heavy that I did not attempt to cross it.

Q. Did you know this channel they called the middle channel, between the islands?

A. Yes, sir; it was swift down where we generally crossed it.

Q. How did the amount of water running in that, in an ordinary summer stage, compare with the amount running in the south channel at the same time?

A. That is pretty hard to answer. That middle channel was quite wide at the upper end. There were two channels together at the upper end. There is a dam to shut the slaughter-house channel off now. Taking the two together, they were quite wide; the water was quite thin there at an ordinary stage of water. It narrowed as it went down to just below where the Meade & Edwards dam was put in. There were two angles came together this way. We had a pole or a small tree to walk across there, and once in a while that would get carried away and we had to go up or down stream; we did not pretend to cross there; it was very swift there. I don't think any man could cross at any place.

By Mr. ORDWAY:

Q. Without a pole?

A. No; I do not think he could cross it, and there was moss on the rock, making it slippery, so he would not wade as much water as he could when it run like this.

By Mr. HOOPER:

Q. Give us your best judgment as to the size of the middle channel compared with the south channel at the ordinary stage of water—the amount of water it carried.

A. I should think it carried some more, although at the time of very high water there was more in the south channel, because it

was wider. I should say at the ordinary stage of water there was more in the middle channel. I never saw it dry; I never
412 saw it but what it would bother you to get across on the stone; you had to be careful or you would get your feet wet when I would walk across, the same day, the south channel without danger.

Cross examination by Mr. ORDWAY:

Q. Did you ever measure the width of the river at any point?

A. I have measured the river at different points a good many years ago, but I cannot say now just exactly. I think the old bridge just above where the Government dam is was near 800 feet long. When we were putting in that present bridge that is in there we wanted to know what the distance was, and we measured it there. That is the north channel, and the time that this Carpenter firm that located here at Appleton—they were there a number of times with the view of getting water power, and we measured it from the point of this island Hewitt bought there—I guess it is Island Number 3—I guess it is right straight, square across from that to this other shore. We measured it up across there to know.

Q. How much did it measure?

A. It was 200 and some odd feet right in that very swift channel, and it was 300 and a few odd feet above across where we measured, where the present bridge now is; in the way we measured a little below where the bridge is.

Q. Were you there when the canal was dug?

A. Yes, sir; before.

Q. Was there a coffer dam put across from the head of the big Island 4 over to the north shore?

A. Yes, sir.

Q. What was the effect of that? Did it turn the water out of the north channel?

A. Not all.

Q. Most of it?

A. Yes, sir; turned the most of it.

Q. What did they put the coffer dam across for?

A. So they could lay this retaining wall. The water was deep where they put that retaining wall. They put it out in the bed of the river.

Q. Did they take stone out of the channel to put in that retaining wall?

A. Yes, sir; gathered up stone up in the rapids; gathered that all up and put it in the wall, and then they dug others right out of the canal until they made it quite deep.

Q. You say the bridge across above the Government dam measured somewhere about 800 feet?

A. That would be my recollection, but we struck quite up the hill.

Q. How far up on the hill did that strike from the north bank of the river?

413 A. I could not say now.

Q. A couple of hundred feet?

A. No; it did not strike very far, but it was some feet.

Q. As far over as the north bank of the canal now is?

A. No; there was a good deal of dirt taken off there.

Q. Did the bridge extend over so far as the north bank of the canal is now?

A. I think there was quite a point of that bank taken off to fill up in there.

Q. How far did it extend into the south bank, the Ledyard side, that old bridge?

A. It would seem to me that it was nearly 800 feet across where the water was; pretty near; not quite.

Q. Was the canal all dug into the bank of the river along over against the north end of the Government dam?

A. No; I think there was not any canal dug into the bank at the upper end, at the lower end.

Q. I am speaking of away up at the guard-lock.

A. I do not think there was much there.

Adjourned until 9 o'clock.

JOHN DASHNER, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. I live in the town of Kaukauna.

Q. How long have you lived in that town?

A. I have been living there something like 12 years; in that neighborhood, but I used to live in Sneiderville. I owned land in that town, and then I moved into the town of Kaukauna.

Q. Where is Sneiderville?

A. That is in Outagamie county; part of it.

Q. How far from Kaukauna?

A. I would call it between 5 and 6 miles.

Q. How early did you know the river and islands in the town of Kaukauna?

A. Maybe you would not believe it if I told you, but I am going to tell you I have known the town, river, and rapids for the last 57 years; little over that; might be 58.

Q. What have you done along there?

A. My father went up to Grand Rapids; that is in Wisconsin. He hired out to a fur company, so they went up. This fur company had a Durham boat and took a lot of goods up there to trade with the Indians, and my father took me along. I should judge I was at that time 9 or 10 years old. Of course, I did not work. I was too small, and my father was kind of a clumsy man. He was a carpenter by trade. They used to send us ahead and watch the baggage, so they drew the baggage to Kaukauna, just above
414 where there used to be an old grist-mill. They drew it by land, but the boat came around by the river. The men had to

wade in the fall of the year clear up above their waists, trying to get that boat up. We staid there 3 or 4 days, watching that baggage right there at Kaukauna. After they got the goods over they took part of the goods and came up to Appleton, here to Grand Chute, and we came and camped there and watched this stuff until they went after the balance. When they got all the goods there, then they went up to Grand Chute. That is the way it was that year.

Q. What time in the year was that?

A. That was in the fall of the year, because it snowed pretty savage when we were at Appleton.

Q. Which channel did the boats come up?

A. On the north channel, I should call it, the left-hand side of the river going downstream.

Q. When did you see the river next after that down at Kaukauna?

A. We staid about a year up there and then came down and went down to Green Bay and staid there quite a while, and I don't know how long, but probably a couple or 3 years, I came up to Kaukauna. One of my cousins lived in Kaukauna, and I staid with them. I used to be up and down in Kaukauna and see the boat running up and down until I was 14 years old.

Q. Which channel did the boats go up and down in?

A. In the north channel always, and then after I grew up to be a man, a boy 17 or 18 up to 22, I took the boat and run the river myself; hired out as a man my first trip, which was in the fall of the year. The boat was going up to Poygan.

Q. Up above Oshkosh?

A. Yes, sir; somewhere there. I hired out to some man. They were going up to trade. I was going up to the grist-mill, up to Beaulieu's, away in the bend. On the south part of that little channel he had a mill in the bend there, so I thought he could grind my grist. I was along with another fellow. I was a little shaver. He says, I guess we will go, and we may get a chance to get up the river. I will go with you, I says; and so we went and hired out. I did not get much money myself. It was pretty cold—it was in the fall of the year—so I went up, and we had to wade in the water. Of course, it was a small boat. There were negroes and peddlers; they were going up there to trade, so it was an empty boat. They drew goods by land. George Lawe and Grignon used to draw goods around the portage, so they went around, and we got in the north channel, and when we got just a little above where the mill was there is a point of land there where the water struck pretty hard, and just as soon as the boat struck that it went. I was too small to reach the top end of the boat, so they left me, and the water took me, and I went right to the end of that little island, and if an Indian had not jumped in I was drowned. He brought me on the island, where there is a big mill now at this present time.

Q. Did you get that boat up?

A. The boat went clear down, and they stopped it, and then we tried it again, and just before we got there we got a tow-line, and

they put me on the shore to pull on the tow-line, and we made out to get the boat up.

By Mr. ORDWAY:

Q. How far did you draw it up with the tow-line, so far as the dam is now?

A. No, sir.

Q. Up near where the city bridge is now?

A. No.

Q. Did you draw it up with a tow-line as far as George Lawe's house?

A. Not quite; pretty near; just a little below; right on George Lawe's land.

By Mr. HOOPER:

Q. Tell us about your next trip up.

A. After I grew to be a big man I hired out again. I used to start from the bay and go away up to Portage in the spring of the year in what we used to call the June freshet. On account of heavy water we used to go around by the south channel. We used to tie a pole
416 9 or 10 inches through right across the boat, so we had to lift the boat up so it would not get on the ground, because there were not over 3 or 4 feet of water in the channel—that is, the south channel, where Beaulieu's mill was—because the biggest part was in the north channel, and in high water, in order to save us work, we used to go around, and then we had to get some Indian who knew the place to help us, and we had to pick around the channel to keep away from the stones.

Q. How many times did you go up the south channel?

A. Three or four times.

Q. How many times up the north channel?

A. A good many times. I could not tell you. I did not keep track. I have seen several boats go through there, and they followed the main channel—the north channel—going up and down when the water was in a low stage, and when the water was high they did not dare go up; the water was too strong.

Q. Did you know the middle channel between the islands?

A. Yes, sir.

Q. How was that?

A. It was pretty severe. Boats never went through there. It was too swift water.

Cross-examination by Mr. ORDWAY:

Q. How old are you?

A. I am 67—that is, if they give me the right age. Martin can tell us. He was trustee for us.

Q. He is dead?

A. Yes, sir.

Q. You have been farming of late years?

A. Yes, sir; since I am married.

Q. Did you say you were born at Green Bay?

A. Yes, sir; when my father came in this part of the country there were only two buildings at Green Bay.

Q. Your father was a Frenchman?

A. Yes, sir.

Q. Your mother was an Indian?

A. Yes, sir; a Menominee.

Q. They were Chippewas there at Green Bay?

A. Kind of mixed up.

Q. Was that the Menominee reservation there?

A. Yes, sir; in Shawano county. The Menominees used to own land away up there to Grand Rapids.

Q. Did you know the Beaulieus?

A. Yes, sir.

Q. Father and son?

A. Yes, sir; I knew his brother and some of his nephews from Lake Superior.

417 Q. Who built the grist-mill below Lawe's house?

A. Grignon, I guess. At the time we camped there to watch that baggage the mill stood there. They called it Grignon's mill. Tibot built the mill.

Q. Do you mean he was the mill-right?

A. Yes, sir; he was the mill-right.

Q. He was not the owner?

A. No, sir.

Q. Grignon was the owner?

A. Yes, sir.

Q. Which one?

A. Charles, Alex., and Gustave Grignon. That was the old man, Gustave Grignon.

Q. You knew the old man?

A. Yes, sir; I was raised with one of the Grignons, in Green Bay—Alex. Grignon.

Q. Brother of old August?

A. Yes, sir. It was about a half a mile from Martin's place.

Q. Did you know Paul Ducharme?

A. Yes, sir. I knew Peter Ducharme. The man used to own the place where George Lawe is now.

Q. Do you remember Dominick Ducharme?

A. Yes, sir.

Q. Where did they live?

A. At Sneidertown.

Q. In Outagamie county?

A. No; Green Bay.

Q. Where did Paul Ducharme live?

A. I do not know where he lived. I was more acquainted with Paul and Peter.

Q. You say they used to take goods off the boats down below on the lower land and take the goods over the portage up above Lawe's house?

A. Not above Lawe's house. They used to draw some, but not

all. They used to come up at that point, as I told you, where we watched the baggage. They parted the load and came up to Appleton with poles and went back after the rest of the goods.

Q. You know Lawe?

A. Yes, sir.

Q. He is older than you?

A. Yes, sir; I think he is.

LOUIS FORNEY, a witness for the plaintiff-, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. I live in Neenah now. I moved there in '61, in May.

Q. Where did you live before that?

A. I moved from Kaukauna when I went there.

Q. How long did you live in Kaukauna?

A. Ever since I was a little boy, and when I got to be a
418 man I went away and came back and worked for Grignons a good while at one time when I was 16 years old.

Q. How old are you?

A. If I live to see October 10, I will be 70.

Q. Did you know the channels and the river there at Kaukauna there for a good many years?

A. I guess no man living around there knows them better than I do, because I have been through them so many times.

Q. How long ago was it you was through them so much?

A. I lived right there, and of course every Sunday I went a-fishing along the bank of the river; lots of black bass to be caught around there.

Q. Did you ever help to run boats up and down the river?

A. Yes, sir; I have.

Q. Before there was any dam in there at all?

A. Yes, sir.

Q. What kind of boats?

A. What they call Durham boats.

Q. Which channel do those boats go through?

A. The north side.

Q. Have you known them to go through the south side?

A. I went there only once. It was high water, so we crossed the Durham boat below the island and took the south branch; then we dragged the boat off pretty nearly all the way. We all waded; could not pole it.

Q. Why could you not pole it?

A. It was too shallow.

Q. When you dragged it you lifted it a little?

A. Yes, sir; we tied a long pole across, 3 or 4 of them, and at each end of the pole were 3 or 4 men, and shoved it right along.

Q. Which was the deeper channel—the north or south channel?

A. Sometimes the water was low and sometimes high. The middle channel drew a good deal more water through there.

Q. The middle one drew as much or more than the south channel?

A. Yes, sir; the middle one drew a good deal.

Q. More than the south?

A. Yes, sir.

Q. How was the north channel compared with the middle channel? Which was the largest—the north or middle channel?

A. The north channel was some wider.

Q. More water or less water?

A. The middle was kind of narrow. In the middle it was always deep. It comes to- fast through the middle. We could never pole any boat in those days; it was too much fall to
419 take it where the narrowest place is.

Q. Which carried the most water—the north channel or the middle channel?

A. The north channel.

Cross-examination by Mr. ORDWAY:

Q. Are you a farmer?

A. I have been working for farmers and I put in 26 winters in the pinery-s.

Q. What did you use to do along back in those years when you lived at Kaukauna?

A. I worked for Grignon.

Q. Which one?

A. Charles Grignon.

Q. Farming?

A. Yes, sir; when I first hired out there I had six cows to milk; that is all. I was doing chores around.

Q. That was before the canal was dug?

A. Yes, sir.

Q. Where did they live then?

A. They lived back of the old house. I suppose that is tore down.

Q. Log or frame house?

A. It was, I guess, hewed timber and clap-boarded over in the old fashion.

Q. Down by the lower lock?

A. Yes; right at the edge; the foot of the hill.

Q. Have you a family now?

A. Yes, sir.

Q. Where did you live at Kaukauna when you had a family there?

A. I had a place on this side, Ledyard side. I had six acres of land there.

Q. How far from Beaulieu's mill?

A. Just about ¾ of a mile.

Q. Upstream from Beaulieu's?

A. Yes, sir; upstream.

Q. How far from the Government dam that is there? How far was your house from the Government dam?

A. It was just about on the top of the hill, not over a half a mile.

Q. That is over against the dam, south of it?

A. Right opposite the dam.

Q. Was there a house down on the flat near the dam on the Ledyard side then?

A. That is the Government house.

Q. What was it used for?

A. It has been sold.

Q. What was it used for then? Was it a mission-house?

A. Yes, sir; that was a reservation years ago.

Q. Was it a mission-house?

A. Yes, sir.

Q. What did Beaulieus do there?

A. He run a saw-mill there and a grist-mill afterwards.

Q. Did he have a grist-mill there?

A. Yes, sir.

Q. Do you know B. H. Beaulieu, a man about your age?

420 A. Yes, sir; David Beaulieu.

Q. A man about your age?

A. Yes, sir.

Q. Did you know his father?

A. Yes, sir.

Q. How did they use to get goods up and down the river over past the rapids?

A. They used to unload down below and we used to haul it up above Lawe there.

Q. Then they would shove the boats up the rapids?

A. Yes, sir.

Q. How did the men shove them up?

A. We used to have a long line.

Q. A tow-line?

A. Yes, sir; and the men would be shoving against the boat and the rest would be pulling off this way; that is the way we used to get them up.

Q. Did you ever put a pole across?

A. Not on that side.

Q. Where did they put that pole across the boat—the bow or the stern?

A. We used to have 2 or 3 poles right in the middle and one on the forward end and one at the back end.

Q. And men in the river on each side of the boat, taking hold of the poles?

A. Yes, sir; wading.

Q. When the water was deep enough they shoved it in the water and when shallow raised it up a little?

A. Yes, sir.

Q. And walked along that way, carrying it upstream?

A. Yes, sir.

Q. Carried it up to where the present Government dam is that way?

A. No, sir; we poled it up; there was big water there and we could not get into the water. Just as soon as we got to where Lawe's old house used to stand, then we took the poles from there.

Q. A little upstream from that?

A. Yes, sir.

Q. On the other side, the south side, where did you get to deep water when you went up the south channel?

A. The time I went with Bridge through on the south channel we crossed the river there and dropped it down to where the goods were, and they put about a half a load there and they poled up the best way we could get to it.

Q. You only went through the south channel once?

A. Only once.

By Mr. CARY:

A. Did you ever see any one else go through the south channel with a boat?

421 A. No, sir; not that I recollect of; the water must be pretty high to take that channel, because there was not water enough to do any good there.

Q. Your father was a Frenchman?

A. Yes, sir.

Q. And your mother a Menominee?

A. Yes, sir.

Q. And you were born at Green Bay?

A. Yes, sir.

422 Endorsement: Testimony in main suit for division of water, &c., before Referee F. S. Bradford, in Kaukauna, Febr'y 19, 1890, and an adjournment at Appleton, March 10th, 1890. This was so taken on 19th Febr'y on part of Kaukauna Water Power Co. and those def'ts claiming under or through it. On March 10th the pl'ffs began taking their testimony. Circuit court, Outagamie county. Filed Apr. 7, 1890. Geo. W. Gerry, clerk, by A. M. Smith, deputy. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

423 Circuit Court, Outagamie County, Wisconsin.

THE PATTON PAPER COMPANY (LIMITED) *et al.*, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER COMPANY *et al.*

Testimony taken by and before Referee F. S. Bradford, at the court-house, in Appleton, on the 29th day of September, 1892, and following days, under order of reference of September 28th, 1892.

Messrs. Cary and Ordway appear for the defendants mentioned in the answer which they have filed to the cross-bill, to wit, Kaukauna Water Power Company, Harriet S. Edwards, Mil., Lake Shore & Western R'y Company, G. Ling, Joseph Carlson, Braukaw Pulp Company, The Badger Paper Company, B. Aymar Sands, Joseph

Kline, M. A. Hunt, one Anna A. Hunt, whose name appears in this case before, but is now omitted for the reason that any supposed interest she had passed to and was at the time of the commencement of this action represented by the defendant M. A. Hunt, and, further, that that interest since the commencement of this suit and filing of the *lis pendens* has passed to the Kaukauna Water Power Company. David S. Ordway also appears for the defendants Henry Hewitt, Jr., and William P. Hewitt upon and as to the issue created by the cross-complaint of the Green Bay & Mississippi Canal Company and answers thereto, for which two said defendants answers have been filed by Mr. Ordway. Further Mr. Ordway does not appear or represent Henry Hewitt, Jr., and William P. Hewitt or either of them as to the issue raised upon the original complaint of

The Patton Paper Company (Limited) *et al.*, plaintiffs.

424 Mr. Ordway states that William P. Hewitt and Mr. Priest are interested alike, in common, on the north channel downstream from the middle channel, and they may wish to be heard or put in some testimony on their own part before this reference is closed. They will take care of their own interests in the original suit.

By Mr. HOOPER: Mr. Greene and myself appear for the plaintiffs.

Mr. Stevens, Mr. Mariner are present and appear for the defendants Green Bay & Miss. Canal Co. and those claiming under it.

Mr. P. R. Barnes appears for the Reese Pulp Company, George F., George W., and Margaret J. Kelso, and, although not personally present, is represented on this reference by Mr. Hooper.

It is agreed between Mr. Ordway and Mr. Stevens that the original answer of the Kaukauna Water Power Company to the cross-bill in this suit be amended so as to correspond with the copies already served on opposite parties in this suit.

It is admitted that the Meade & Edwards dam is 12 to 15 feet high; furnishes a head of from 12 to 15 feet.

It is admitted that the title of the plaintiff Patton Paper Company is as stated in paragraph number seven of the complaint, except that the Green Bay & Miss. Canal Company does not admit the title to any water power as against the contention made in its cross-bill, but that as against all other titles it does admit title in the Patton Paper Company. The Patton Paper Company's title comes through Meade & Edwards.

All parties agree that there were no improvements for the creation and use of hydraulic power on Islands 3 and 4 until the improvements made by Meade & Edwards stated in the complaint.

The eighth paragraph of the complaint is admitted to be true, except as qualified with relation to the title of water power as above stated.

425 Admitted that the mill mentioned in paragraph nine is a valuable mill and could not be run without water power.

It is admitted that the allegations of paragraph ten are true, except that the admission in regard to the hydraulic power is subject to the exceptions stated in reference to paragraph seven. It is agreed that the admission in the answer of the Green Bay & Miss.

Canal Company relative to paragraph nine shall be subject to the same exception in regard to the hydraulic power as stated in the admission of paragraph seven.

It is further admitted by all parties that the title of Kelso to the property mentioned has come to and is vested in the Reese Pulp Company, which has been substituted as defendant herein in place of Kelso.

The Kaukauna Water Power Company admit the allegations of title in paragraphs 7, 8, 9, and 10 only to the extent that the parties therein named own substantial and valuable water power, but such company claims that the amount of such power is limited to the flow appurtenant to the middle channel, which may not be sufficient to furnish the amount of water power stated in said paragraphs to belong to the parties therein named.

The Green Bay & Miss. Canal Company admit paragraphs 17, 18, and 19 of complaint.

It is admitted by all that the Hunts owned Island Number Two at the time of the commencement of this action, but their title has since been vested in the Kaukauna Water Power Company.

Admitted that paragraph twenty-three was true at the time of the commencement of the action, but the interest therein specified as being the interest of Harriet Edwards and Matthew J. Meade *have* since the commencement of the action become vested in the Kaukauna Water Power Company.

426 Admitted that paragraphs 24, 25, and 26 were true at the time of the commencement of the action, but since the commencement of the action the interest of M. J. Meade and Harriet S. Edwards has become the property of the Kaukauna Water Power Company.

The same stipulation is to go in here that was made concerning lot 5 in the case of The Canal Company against The Kaukauna Water Power Company, viz:

Page 79, U. S. Transcript (U. S. Sup. Ct.):

"It is admitted, for the purpose of this action, that the United States, being the owner of lot 5, section 22, township 21 north, of range 18 east, sold the same September 1st, 1833, to one Garrett V. Denniston by duplicate, which he assigned to Joshua Hathaway, Jr., who received a patent from the United States therefor, which bears date August 10th, 1837, recorded in volume 2 of Deeds, page 206, in the register of deeds' office of Outagamie county, who conveyed to Samuel Beardsley by warrantee deed dated April 26, 1836, who held the title till his death, May 7, 1860; that his heirs conveyed said lot to Stephen Frisby October 16, 1871, who conveyed his title to said lot through several mesne conveyances to the defendant The Kaukauna Water Power Company on the 14th day of May, 1880."

It is admitted that paragraphs 31 and 32 of the complaint are true.

Stipulations as to Counter-claim of Green Bay & Miss. Canal Company.

The parties admit that at the time of bringing of the suit the ownership of the shores and islands was substantially as shown by the map Exhibit A[1] hereto annexed.

It is admitted that the lands on the south shore of the river from the head to the foot of the Kaukauna rapids was originally surveyed by the United States in strips extending, each strip on its
427 river front, about twenty-five rods; that these ownerships remained separate from each other for the most part until about May 14, 1880, when the ownerships were united on the river front in the Kaukauna Water Power Company.

Admitted that the Islands One, 2, 3, and 4 in the rapids were separately surveyed and were owned, Islands Number- One and Two separate from the other islands and separate from each other, and Islands 3 and 4 were owned in common by the same parties. On the north side of the river from a short distance below the head of Island Number Four, to wit, where the southwesterly line of private claim No. one strikes the river, to a point above the north dam landing of the Government dam the land was owned first by George W. Lawe and afterwards successively by the Fox and Wisconsin Improvement Company and Green Bay & Miss. Canal Company from a point where the S. w'ly line of private claim No. 1 strikes the Fox river, near to the grist-mill of A. L. Smith, down river to about where Division street extended would strike Fox river, it was successively owned, the undivided one-half thereof, by the Fox River Wis. Imp. Co., purchaser from said Lawe in A. D. 1855, and the G. B. & M. Canal Co., down to the present time, and the other undivided half by Morgan L. Martin and Henry Hewitt, Jr., and Wm. P. Hewitt, who successively owned the same, except that there is a claim by G. B. & M. Canal Co. as to ownership of water rights on north channel not deemed material to this cause.

From the lower end of the last-described parcel down river to the extent of a quarter to a half a mile, same premises claimed formerly by the C. & N. W. R'y Co. and now by Hewitt Water Power Co., the title is uncertain, but the ownership was continuous.

It is admitted that after the year 1850 there was no im-
428 provement for the purpose of creating water power on this Kaukauna rapids, except a wing dam and saw-mill in the north channel, in the rear of lots 9, 8, 7, and 6, Jennie's plat, owned by said Lawe and others to about Aug., 1855, and except such as were made by the Fox & Wisconsin Improvement Company until the Meade & Edwards improvement in '79 and '80 and the improvement by the Kaukauna Water Power Company on the south side of the river, commencing in the year 1880 until the time of the commencement of this action; that since the commencement of this action and before the filing of the cross-bill a further improvement was made on the north side of the river between the canal company's canal and the river and over against Island Number Three, which was made on lands supposed when this action was

commenced to belong to the Chicago & Northwestern Railway Co., and which consisted of the building of a large canal, wing dam, and large paper mill by the Hewitt Water Power Co. or the Outagamie Paper Company.

Mr. Ordway, in behalf of the clients represented by himself and Mr. Cary and of the Hewitts, claims that the Fox & Wisconsin Improvement Company never made any use of water for hydraulic purposes or any leases for hydraulic purposes from its canal at Kaukauna.

It is admitted that the State has never taken any affirmative action to authorize any person or corporation to build and maintain a dam across Fox river at the Kaukauna rapids excepting the act of 1848 and act of 1853, organizing the Fox & Wisconsin Improvement Company, and other acts relating to the improvement of the Fox & Wisconsin rivers.

It is admitted that the improvement made by the board of public works and Fox & Wisconsin Improvement Company, their
429 successors, at Kaukauna was substantially as follows, commencing in '50 or '51 and continuing to '55 or '56: Commencing at a point on the south bank of the river, on lot eight of section 22, at a point about 75 rods upstream from the south end of the upper Kaukauna dam, an embankment was raised, commencing at substantially no height*h* and increasing in height*h* as you go down river to the south end of the dam or cross-dam, at which point it was about eight feet above the level of the ground, and which point was on lot 5 of said section 22. From that point a dam or cross-dam was built extending across the river in a northeasterly direction and reaching almost, if not quite, to the north bank of the river. From this point a stone wall and embankment was carried down river nearly parallel with the north bank of the river and about half the breadth of the canal out in the stream, so that about half of the canal lay in the river and about half in or upon the bank. At a point about eleven hundred feet below the north end of this dam or cross-dam this wall and embankment struck the north bank of the river, and from thence it and the canal extended inshore and on the solid land north of the river a distance of about a mile and a half, where they struck the river below the Kaukauna rapids. In passing this distance this canal led from a point above the State dam or cross-dam to a point below the rapids, and included a fall of about fifty feet. This canal lay back from the north bank of the river at varying distances—from a very few feet at its commencement on the land to several hundred feet at the widest part, following the line of the high land as you go north from the river. At a point about one thousand feet downstream from the point where this canal first entered upon the land was built the first lift-lock. This lock had a lift of about 10 feet. About 800 feet below this lock another lock was built with a lift of about 10 feet. At a
430 point about 300 feet below this lock was another lock with a lift of about 10 feet. At a point about 200 feet below this lock another with a lift of about 10 feet, and at a point about 1,500 feet below this lock and near the foot of the canal was another lock

with a lift of about 10 feet. These locks are numbered, commencing down river and going up, from 4 to 8 on the Jennie map, so called, and the general course and length and width of this canal and its distance from the north bank of the river appear on such Jennie map.

About 1876 the United States, having taken a deed of the Fox and Wisconsin improvement from the Green Bay & Miss. Canal Company, built another and new dam across the Fox river at the head of the Kaukauna rapids, which was at its south end about 40 feet and at the north end about 110 feet below the original State dam, and left the old State dam or cross-dam submerged.

It is admitted that in the year of 1855 the Fox and Wisconsin Improvement Company acquired the title to lands in section 24 on the north side of the river, which included the dam or cross-dam landing and extended below the dam landing down to the upstream boundary of private claim number one, at about which point the canal leaves the bed of the river and strikes inland at about the location of A. L. Smith flouring mill; that at the same time the Fox and Wisconsin Improvement Company took a conveyance of that part of the south half of private claim number one lying between the canal and the river, by which conveyance it claimed the fee of the whole land, but by which conveyance it acquired the fee of only the undivided half of said land; that thereafter and about the year 1859 said Fox and Wisconsin Improvement Company proceeded to plat said lands in private claim number one into lots convenient in size and shape for mill lots, such lots extending from said
431 canal to the river and being about one hundred feet in width on the canal, and which lots appear as platted on the map of Grand Kaukalin, one of the Jennie maps, so called.

It is admitted that there were twelve lots in the plat, of which about seven lie below and five above the head of Island Number Three.

It is further admitted that the embankment on the south side of the river above the dam remained unbroken until about the year 1886, when the same was broken by the Kaukauna Water Power Company.

A statement or memorandum of leases is to be furnished by the Green Bay & Miss. Canal Company and attached, and same is hereto attached, marked "D," and made part hereof.

It is further admitted that the sale of lands granted by Congress for this improvement and the sale of such water powers as the Fox & Wisconsin Improvement Company claimed to have acquired from the State proved, on the foreclosure of their trust deed, to be only sufficient to pay the cost of the construction and completion of the works.

It is admitted that the Green Bay & Miss. Canal Company has succeeded to the title of the State and of the Fox & Wisconsin Improvement Company as to the work of improvement and all the hydraulic power which the State or Fox & Wisconsin Improvement Company owned.

All parties agree that the report of the board of arbitrators to

value this property and report of the Secretary of War submitting the same to Congress, together with the report of Captain Houston to the Secretary of War, being a part of the report of the Secretary of War, shall be considered in evidence; same are printed at length in the report of the Secretary of War to Congress, dated March 8, 1872, and said reports may be read from the report of such
432 Secretary of War, and are made part of this bill of exceptions without copying the same at length, and same are printed also at length on pages 62 to 74, inclusive, of the compilation of laws and documents relating to hydraulic power of the Fox or Neenah river, compiled by the Green Bay & Miss. Canal Co. in 1881, which has been in common use in these litigations and accepted as authentic, a copy thereof being in the State library at Madison, and said reports may be read therefrom and are made part of this stipulation without copying the same at length.

It is admitted that three acres and one-half of land is large enough in extent on which to build mills large enough to use to advantage the full flow of the Fox river under a 15-feet head.

It is stipulated that the water power at Kaukauna is worth more than $50.00 per horse-power, purchase price.

It is admitted that in the building of the canal and locks and dam at Kaukauna for the improvement of the river there was expended by the State of Wisconsin and Fox and Wisconsin Improvement — and Green Bay & Miss. Canal Company about the sum of $100,000, and of which $10,000 was expended on the dam.

It is admitted that the Green Bay & Miss. Canal Company owns sufficient land on Islands One, Three, and Four to furnish mill sites for mills of sufficient capacity to use all the hydraulic power of the river appurtenant to these islands and appurtenant to the shores of the river adjacent to these islands on the north and south side if the said lands were partitioned, and that their ownership of such lands is as a tenant in common of about one-quarter interest in the lands.

It is agreed that the printed pamphlet containing the judgment of the circuit court dismissing the complaint and opinion of the supreme court reversing that judgment, and judgment of the
433 circuit court in conformity with the opinion of the supreme court, and opinion of the Supreme Court of the United States affirming that judgment be in evidence, together with the pleadings in the action of The Green Bay & Mississippi Canal Company against The Kaukauna Water Power Company *et al.*

Plaintiffs offer proof on the issue it makes on the cross-bill or counter-claim presented by the Green Bay & Miss. Canal Company.

Plaintiffs offer in evidence copy of a volume of maps, with the note explanatory accompanying the same, dated in 1859. These maps are from surveys made by W. S. Nearing, under direction of Daniel C. Jennie, in 1858. Daniel C. Jennie was the chief engineer of the Fox and Wisconsin Improvement Company at that time. These maps have remained since the time they were made, in one bound volume, in the office of the Fox and Wisconsin Improvement Company and the trustees of the Fox and Wisconsin Improvement Company, under its trust deed, until the property constituting the

improvement passed to the Green Bay & Miss. Canal Company; since which time it has remained in the office of the Green Bay & Miss. Canal Company.

Leases have been made by Green Bay & Mississippi Canal Company of lots of land, with water power, described in its leases as lots and blocks according to this volume of maps; which leases have been recorded. Taxes have been assessed since about 1859 against the Fox and Wisconsin Improvement Company and the Green Bay & Miss. Canal Company, its successor, and their leasees, by the description of lots and blocks according to this volume of maps marked Exhibit B 2.

Said copies of maps are a roll three inches thick by two and a half feet long. It is therefore stipulated and agreed that the same are part of this testimony and stipulation without actual annexation, and that the same or true copies may be produced on
434 the argument in the trial court or courts where said action may be tried, and in the supreme court and in all other courts or places where the same may be necessary or required to be produced or used upon any trial, argument, or hearing of this action or any part of it, and with the same effect as if fastened or annexed to this testimony and stipulated facts.

On the sheet representing lock number 17 at Appleton, being sheet 4 of such maps, appears the map of the Grand Chute dam, so called; this map represents the upper end of the canal around the rapids at Appleton. At the north end of this dam, on what appears on the map to be the water-power canal, and above such canal, on the elbow of the dam, mills were built prior to the time the improvement was completed at that point under the riparian owners' title—that is, under Martin, Conkey, and Bowen, who were the owners of the land at the north end of the dam. Such use has continued from that time to the present time by such riparian owners, increasing from time to time until about ten years ago, when such use had increased to the extent that it substantially took all the half of the flow of the river in the ordinary stage of water. Action has been commenced since the first day of January, 1892, on the part of the Green Bay & Miss. Canal Company to restrain such use by the riparian owners. The Green Bay & Miss. Canal Company now claim title to all the water power at this point on substantially the same ground as they set up in their cross-bill in this case.

The investments made in mills and mill machinery by the riparian owners at the north end of this dam had, ten years ago, been made to the value of over a half million dollars.

Near the right-hand upper corner of this sheet 4 appears the head of Grand Chute island and wing dam, running upstream from the head of Grand Chute island towards the north shore of the
435 river and opposite the head of Grand Chute island, a wing dam running out and up from said north shore nearly opposite the head of Grand Chute island.

Also a dam across the south channel of the river near the head of Grand Chute island and just below the bridge across the south channel represented on the map. The wing dam ran out and up

from the north shore nearly opposite the head of Grand Chute island, and was built by the riparian owner, Amos A. Lawrence, who was the riparian owner on that north side of the river at that point about the year 1849.

The wing dam running up and out from the head of Grand Chute island was built, first, in 1856, and subsequently, in a more substantial form, in 1857, by Edward West, who was the owner of Grand Chute island and riparian owner on the south side of the south channel downstream from and below the road marked "plank road" on this map.

The dam across the south channel from Grand Chute island to the south shore was built by Edward West in 1856.

Immediately after the building of these wing dams the owners of the water powers created by the same commenced to sell and lease water powers, and have from time to time sold and leased water powers therefrom, until they have sold the entire water power furnished by the river at that point.

In 1870 Edward West dug away that part of Grand Chute island above the road near the plank road and dug a large canal, about 80 to 100 feet wide, down through the middle of Grand Chute island, for water-power pusposes, laying out water-power lots on each side of said canal, running from the canal to the north channel of the river on the north side and from the canal to the south channel of the river on the south side.

436 In 1876 a company called the Appleton Water Power Company, but which owned no land and never issued any stock, raised money by voluntary subscription principally from the water-power claimants on the north and south sides of the river near the head of Grand Chute island, raising some of the money by voluntary subscription from merchants, bankers, and others for the benefit of the city, out of which and with such funds built a dam across the north channel of the river about at and a little below the head of Grand Chute island, as it existed in a state of nature, connecting the south end of the cross-dam with that part of Grand Chute island which was left north of West's canal.

The use of water power from the mill pond above the head of Grand Chute island has increased from time to time since 1850 on the north side and since 1856 on the south side, until mills have been built sufficient to take all the water of the river at that point in an ordinary state of water.

The entire investment in dams, canals, mill buildings, and machinery on this water power maintained by the dam at or near the head of Grand Chute island amounts to at least a million dollars, and did amount to about that sum on the first day of January, 1892.

Since the first day of January, 1892, action has been commenced by the Green Bay and Mississippi Canal Company against the various claimants of the water power at this point under the riparian title to restrain them from using water at this point on account that the water power is claimed by the Green Bay & Miss. Canal Com-

pany under the same title as that set up in its cross-bill in this action.

To the foregoing Mr. Ordway assents on behalf of the defendants represented by himself and Mr. Cary and by himself individually.

437 Plaintiffs offer in evidence an agreement dated June 7th, '59, and recorded June 8th, '61, between the Fox and Wisconsin Improvement Company, on the one part, and Edward West, Jackson Tibbitts, and Fred'k Packard, on the other part, which agreement is recorded in volume 5 of Mortgages of the Outagamie County Registry of Deeds, on page 424 and following pages. The water power referred to in this contract to be created by Edward West is the same power referred to in the foregoing proofs as the power at or near the head of Grand Chute island. A copy of said agreement is hereto attached and made part of this stipulation.

Plaintiffs offer in evidence a deed from Edward West to Jackson Tibbitts and A. D. Reynolds of 75-horse power of water to be used on a lot therein described; recorded in Outagamie county registry of deeds, volume 25 of Deeds, page 481.

Also a lease, Green Bay and Miss. Canal Co. to Jackson Tibbitts and A. D. Reynolds, dated ——, —, of a lot of land therein described, which lot of land lies on the south bank of the south channel of Fox river immediately above the plank road represented on the Jennie map, sheet four; recorded May 14th, '69, 25 of Deeds, page 219. This parcel of land and this leasehold interest in water power came by divers mesne conveyances prior to the conveyance heretofore specified to the Champion Horse Nail Company.

Plaintiffs offer a deed, Champion Horse Nail Company to the Green Bay & Miss. Canal Company, of the water power conveyed by Edward West to Reynolds and Tibbitts by deed, in vol. 25 of Deeds, page 481, which appears on record in the Outagamie county registry of deeds, in volume 67, page 269; dated the first of July, '88, and recorded July 17th, '88.

438 The proposed enlargement of the canal specified in the contract between the Fox and Wisconsin Improvement Company and West, Packard and Tibbits, and indicated on sheet four of the Jennie maps, was never made and in that respect said contract was never executed, but the same was executed so far as raising of water on the lands of the Fox and Wisconsin Improvement Company by the dam of Edward West, and the building of the embankment along the south shore of the river above the plank road by Edward West, and by the building of the dam by the improvement Co. below Grand Chute island in some other respects, but to what extent it is not entirely definite and certain. Soon after the execution of this contract a small amount of water power was used from the canal of the Green Bay & Miss. Canal Company, then the Fox and Wisconsin Improvement Company, and turned into the south channel of the Fox river below the dam of Edward West, such use amounting to only one hundred or two hundred horse power of water.

In July, '91, the Green Bay & Miss. Canal Company leased fifty-horse power of the water power deeded by Edward West to Tibbitts and Reynolds to the Aniwa Manufacturing Company, which Aniwa Manufacturing Co. has used the same under such lease hitherto and now uses it.

On the 22nd of August, '87, the Champion Horse Nail Company leased 25-horse power, a parcel of the 75, to the Appleton Machine Company, and on the first day of July, '88, the Champion Horse Nail Company assigned its interest as lessor to the Green Bay & Miss. Canal Company.

The value of the improvements, including dam, canal, and mills between Islands Number-Three and Four at the Meade & Edwards water power, made before the commencement of this action, amount-
to about $70,000.

439 The value of the mills, machinery, and canal and dam on the north shore of the north channel over against Islands Number Three below the improvements of the tenants of the Green Bay & Miss. Canal Company, made by the Outagamie Paper Company and Hewitt Water Power — on land alleged in the complaint to be the property of the Chicago & Northwestern R'y Company at the time of the commencement of this action, amount*ing* now and did amount in the year 1887 to over $100,000.00.

At the time of the commencement of this suit the mills built between the canal of the Green Bay & Miss. Canal Company and the north bank of the river, on the south half of private claim number one, and using water from the Green Bay & Mississippi Canal Company's canal under leases from it, were all comparatively of small value, but were of the value *of* in all of about $125,000.00.

Since the commencement of this action mills have been improved much and rebuilt by tenants using water from the Green Bay & Miss. Canal Company's canal under leases from that company, so that such mills of such tenants now represent an investment of about $275,000.00.

THOMAS W. ORRISON, a witness for the plaintiff, being duly sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?
A. Appleton, Wisconsin.
Q. What is your business?
A. Civil engineer.
Q. How long have you been such?
A. Since '76.
Q. With whom are you engaged as civil engineer?
A. N. M. Edwards.
Q. For how long a time have you been in the habit of making investigation of the flow of the Fox river and acquainted with the flow of the river?
A. About nine years.
Q. How many times have you measured the flow of the river?

A. I might say hundreds of times.

Q. What, in your opinion, based on your surveys and
440 measurements and knowledge of the river, is the average available flow of the river for hydraulic power on the lower Fox?

A. 150,000 cubic feet a minute.

Q. Does that apply to the flow at the upper dam at Kaukauna?

A. It does.

Q. Does it apply to all the points on the rapids below the dam at Kaukauna where the water has not been withdrawn from the river into the canals for use of the powers?

A. It does.

Q. How many horse-power does that furnish per foot fall, theoretical horse-power?

A. Nearly three hundred in round numbers.

Q. More exactly 284?

A. Yes, sir.

Q. Do engineers on the river, estimating it, in making their calculations for practical work, take three-hundred-horse power per foot fall?

A. They do.

Q. Assuming that the canals and locks are in proper condition, how many cubic feet of water per minute are required for the purpose of navigation in the present use of the canal at Kaukauna?

A. I should say one thousand cubic feet per minute.

Q. That applies during the season of navigation only?

A. Yes, sir.

It is admitted further that in the state of nature, and also after the building of the Government dam, that the rapids at Kaukauna below the Government dam were not navigable except that it was possible to push unloaded flat-boats up the stream, men getting into the water to push them up, and that the channel upon the rapids was rocky, winding and twisting between, around among obstructions, and very swift, the north channel dangerous if attempted to be crossed.

The plaintiff introduces pages 11 and 12 of volume 2 of the Records of the Proceedings of the Board of Public Works, which reads as follows:

"STATE LAND OFFICE, OSHKOSH, *September 9th*, 1852.

Board of public works in session.

Present: Messrs. Prame, Richardson, and Prouty.

The board proceeded to audit and allow the following accounts for which warrants were duly drawn on the treasurer. (There
441 follows a table of accounts audited and warrants drawn.)

The board then proceeded to audit and allow the following estimate*d* for which vouchers were allowed to the contractors. (Here follows table of estimates and vouchers.)

Ordered that the release of land from George W. Lawe and Agt. Grignon be placed on record.

Release.

In consideration of one dollar to us in hand paid by the board of public works of the State of Wisconsin and in further consideration of the benefit to be derived by us from the location of the improvement of the Fox river upon the west side of said river, we the undersigned proprietors of lands on the said west side do hereby release to the State of Wisconsin from all and every claim which we might have on account of damages resulting to us from the location of said work and we do hereby give and grant said State of Wisconsin the right of way over and across our said lands of the width of the canal to be excavated and the embankment, to secure the same of such width as in the judgment of the engineer employed upon said works may *deem* sufficient.

Given under our hands and seals this 14th day of June 1851.

AGT. GRIGNON. [L. S.]
GEO. W. LAWE. [L. S.]

I agree to the above grant so far as my interest in the premises extends, provided the canal and lower embankment shall not exceed 150 feet in width and not interfere with the sulphur springs.

ALEX. GRIGNON. [L. S.]

On motion, the board adjourned."

All the defendants represented by Mr. Ordway unite in the introduction of the extract from the book of the board of public works just put in by Mr. Hooper.

442 Plaintiff- introduces from the testimony given by Captain Edwards in the suit of The Kaukauna Water Power Company against The Green Bay & Miss. Canal Company the following: "There is an embankment from the south end of the dam across the whole length of lots five and six and lot 7. That embankment varies from a foot or two at the upper end to 9 or ten feet at the dam. The dam I found today to be eight and thirty-five one-hundredths feet high. Just below the dam there is an excavation. The natural bank is, I should say, three feet above the water below the dam.

Q. The balance of the embankment to keep the w r in above the dam is on the surface of the bank?

A. I should say about four feet above the present water height of the bank at present, and the water has a fall to the lower level of eight feet and thirty-five hundredths of a foot, and perhaps the bank may be 3 or 4 feet—I should not say over four feet, the original level right opposite the dam above the water—so it would leave about eight feet of bank above; according to that, 8 or 9 feet above the original level.

Q. How large a place has been excavated there at the end of the dam?

A. When the dam was put in there there was a hole or pocket in there of 60 feet long and perhaps forty feet wide at the widest

part, extending up around this inside the line of the embankment for sixty to eighty feet; then there was a depression along up generally along the embankment. They must have borrowed to raise the bank. The width between the embankments and blue line at present on the ground right opposite the dam I make 110 to 120 feet. I think the new dam is 30 or 40 feet longer than the old dam. It is a little more diagonal across the river. The south crib is a little farther south than the other. I should say the cost of the old dam was eight to ten thousands of dollars. The Green Bay & Miss. Canal Company expended on the old dam while I had charge of it perhaps $200 to $500 some years, amounting in all to, say,
443 three or four thousands of dollars. In my estimate of eight to ten thousand I took only the construction and not the cost of maintaining before I took charge. I don't know of any special breaks without that I should say the cost of maintaining would not be more than I expended. From three thousand five hundred to four thousand horse power of water is furnished by the Government dam at Kaukauna, taking the flow down as far as the first lock of the canal provided all water was carried through the Government canal. They have used on the Government side of Kaukauna up to the present time ('87) 12 to 15 hundred horse power. The upper lock of the Government canal is 2,300 feet below the head of the canal. There is a pretty sharp fall part of that way. I figure the head at the upper lock 12 to 14 feet below the bridge. Right at the dam the head is nine feet or eight and one-half, and the whole flow gives from 25 to 27 hundred horse power there.

Mr. Ordway unites in putting in the testimony of N. M. Edwards above quoted on behalf of the defendants represented by himself and Mr. Cary.

On the Jennie map, so called, sheet eleven represents the upper part of the improvement at Kaukauna, including the State dam or Government dam. The vertical wall represented on this picture was built high enough so that no water could run over it except in the case of an extraordinary freshet. It was the intention in the construction that no water should run over it.

T. W. ORBISON recalled, and examined by Mr. Hooper:

Q. Would the drawing of water for power through the Government canal at Kaukauna improve or interfere with the navigation of the canal?

A. It would interfere with rather than improve it.

Q. Drawing a small amount of water would be a small interference, not noticeable?

A. Not noticeable.

444 Q. Would the drawing the water from the canal to the extent of the capacity of the canal as a hydraulic canal interfere with the use of it for the purpose of navigation?

A. It would very materially.

Q. Has the drawing of water from the canal at Kaukauna on the upper level interfered with the navigation of the canal?

A. It has.

Q. Will you tell how seriously and substantially it has interfered with it?

A. It has interfered with it in this way: that all last summer and every summer since I have been familiar with the river until this summer the Kaukauna paper mill has shut dow n a portion or all of its wheels every time a boat passed.

Q. Was it practically necessary that that mill should shut down that boats might safely pass it in the canal?

A. It is.

Q. Why has not that been the fact the last summer?

A. Because of the unusually high water and from the fact that the pulp department of the Kaukauna mill has not been running this summer.

Q. What ratio has the flow of the water during the past summer borne to the ordinary flow of the water during the summer season?

A. It has been twice as much for the last three months as there ordinarily is.

Q. With what rapidity would it be proper for the water to flow in the canal used for the purpose of navigation?

A. That is something I am not away up in, but I should say two hundred feet a minute would be a very swift current in a tortuous, crooked channel like that, a narrow, crooked channel.

Q. How rapid is it practical to have water pass in a canal for hydraulic purposes?

A. There is a difference between what is practical and what is customary. In making improvements we generally figure to get the velocity down below one hundred and fifty feet a minute. In a long canal like this I should say one hundred feet a minute is all you should have for rapidity for hydraulic purposes.

445 Mr. Ordway, in behalf of his clients individually and on behalf of the clients represented by himself and Mr. Cary, puts in evidence a certificate of entry from the register's office of the United States at Menasha and files the same with the reporter, dated April first, 1892, showing entry of fractional section 24, town. 21 north, of range 18 east, by Harvey Eugene Eastman; 7th of October, 1845; certificate of entry (signed) assigned to George W. Lawe, assignee; marked Exhibit 1*a* and hereto attached and made a part of this report.

Second. Proof that the same fractional section was patented to Geo. W. Lawe, assignee, on May 10th, '48, by the United States.

Third. Proof that on and prior to December 12th, '51, George W. Lawe was seized and the owner of the south half of farm lot or private claim number one on the north side of the river at Kaukauna, which private claim was patented by the United States Government to Paul Du Charme.

Fourth. Proof that prior to 1855 one Matthew J. Meade had by conveyance from said Lawe become interested in the same south half of private claim number one.

Fifth. Mr. Ordway, on behalf of the same parties above mentioned,

read in evidence the following instrument: A warranty deed executed by George W. Lawe and Catherine A. Lawe, his wife, to Morgan L. Martin, dated and acknowledged December 12th, '51, and delivered on the same day, and recorded in the office of the register of deeds of Outagamie county on the 11th day of September, '52, in volume 3 of Deeds, on page 212, in and by which deed said George W. Lawe and wife granted and conveyed to the said Morgan L. Martin the undivided one-half of that part of the south half of said private claim number one lying on the easterly side of the canal at Kaukauna, in said county of Outagamie, and then owned
446 and occupied by said George W. Lawe, excepting and reserving to the said Lawe and wife certain buildings and improvements on said land. The consideration appears in the deed as one dollar.

Sixth. A warranty deed duly executed and delivered on the 17th of August, '55, and dated the 14th of August, '55, recorded in the office of the register of deeds of said county of Outagamie on the 25th of August, '55, in volume six of Deeds, page thirty, in and by which last-mentioned deed Matthew J. Meade granted and conveyed to the Fox and Wisconsin Improvement Company and its assigns all that tract or parcel of land situate at Kaukauna, in Outagamie county aforesaid, described as follows: "Commencing at the upper or westerly extremity of the canal at Kaukauna and 20 feet north of the northerly water line of the canal, and running thence down and along the bank of said canal and twenty feet distant from the water line as aforesaid to the northerly line of the south half of private claim number one, lately owned by George W. Lawe; thence following said northerly line of the south half of lot one aforesaid easterly to the Fox river at low-water mark, and thence upstream along the margin of the Fox river to the upper extremity of the guard-lock at the head of the canal, and thence northerly to the place of beginning, it being the intent of the party of the first part to convey to the said second party the tow-path on the north side (not including any buildings or other improvements now erected thereon) and all the land owned by the party of the first part lying between said tow-path and the Fox river.'

Seventh. A quitclaim deed executed and acknowledged and delivered on the 28th day of August, '55, and recorded in the office of the register of deeds for Outagamie county on the third day of September, '55, in volume six of Deeds, on page 36, in and by which said last-mentioned deed the said George W. Lawe and
447 Catherine A. Lawe, his wife, granted and quitclaimed unto the Fox and Wisconsin Improvement Company, its successors and assigns forever, the same tract or parcel of land mentioned in and bounded the same as in the deed last above set forth, and containing this further clause: "Subject, however, to the conveyance of a portion of said lands hereinbefore executed by George W. Lawe and wife to Morgan L. Martin."

Eighth. A warranty deed executed, dated, and delivered on the 22nd of January, '80, and recorded in the office of the register of deeds of said county of Outagamie on the 26th of January, '80, in

volume 47 of Deeds, on page 171, in and by which said last-mentioned deed the said Morgan L. Martin and wife granted and conveyed unto the defendants herein, Henry Hewitt, Jr., and William P. Hewitt, the one undivided half of all that part of the south half of private claim number one at Grand Kaukalin, in the county of Outagamie, which lies south of or east of the canal, it being the same tract conveyed to the said Morgan L. Martin by George W. Lawe and wife by deed bearing date December 12th, '51, recorded September 11th, '52.

Ninth. The deposition of George W. Lawe taken on behalf of the defendants represented by A. L. Cary and Mr. Ordway on the 25th of March, '92, and the documents therein referred to and thereto annexed, which deposition is now on file with the clerk of this court; said deposition is also offered by Mr. Ordway on behalf of the defendants Henry Hewitt, Jr., and William P. Hewitt.

Tenth. A lease dated in the body thereof June 3d, '61, and recited to be between the Fox and Wisconsin Improvement Company and Alexander Mitchell, Charles Butler, and Alexander Spaulding, trustees of the Fox and Wisconsin Improvement Company, parties of the first part, and Charles Cord and William T. Grey, Morgan L. Martin and E. S. Martin, parties of the second part, of a lot on the north side of Fox river known and distinguished on a
448 map as laid out by Daniel C. Jennie (same map put in evidence by Mr. Hooper) as lot number three, in block number one, the original of said map being in the land office of said company. The said lease was executed first by Morgan L. Martin and E. S. Martin, his wife, then by the president of the Fox and Wisconsin Improvement Company, then by Charles Butler, and then, lastly, by Charles Cord and William T. Grey, and written over and against their signatures "parties of the second part."

Copy of the lease filed with the reporter, marked Exhibit 2b, and hereto annexed and made hereof.

In connection with that lease I read the testimony of John Stovekin heretofore taken upon the same subject in a cause pending in this court between The Green Bay & Miss. Canal Company, plaintiff, and Henry Hewitt, Jr., and William P. Hewitt, Peter Reuter, and Alexander Reuter, defendants, subject to the objection of the Green Bay & Miss. Canal Company that the same is immaterial, as follows (from page 46 of the printed case on appeal to the Supreme Court):

"I went there (Kaukauna) in '66 and rented lot 7 from the plaintiff, self and other parties mentioned. We built a saw-mill upon it. * * * I bought the lease in '66, which had been before then given to Cord & Grey. I bought it before I took the lease from the plaintiff. The lease from the plaintiff of lot 7 was written and issued, but through some neglect on my part was never signed by the canal company. * * * I have not had any written lease of any portion of that tract except that and the transfer of the Cord & Grey lease * * * (page 48, case). I took a transfer of the Cord & Grey lease.

Q. Who were the lessors in that lease?

Mr. Hooper, for the plaintiff, objected and said: We can furnish you with the lease in the morning.

Objection overruled and plaintiff excepts.

449 A. I understand that it was the G. B. & M. Canal Company and Morgan L. Martin. I understood that from John Cord when I bought the premises.

Q. Did you ever have any conversation with A. L. Smith in regard to it?

A. When I first came there I understood there was some mistake about the lease and spoke to Smith in regard to it. He said Cord & Grey rented it from them and * * *

Q. And what?

A. And Morgan L. Martin.

Q. He said Cord & Grey could transfer the title, didn't he?

A. Whether the lease was ever transferred—the deed that I have says that the lease is conveyed with the property. The lease itself was never assigned in writing by any parties that originally got it. I took a deed from John Cord. It transferred to me that lease. I had parties look over the records, and they told me it was all straight. I went to Smith, and he told me that Morgan L. Martin was the lessor. I could not understand the lease; in one part he is lessor; in another part he signs with * * *

Q. Another part what?

A. Another part he was not—kind of contradicts itself, so I asked for an explanation. I was satisfied that it was all correct. I could not remember his language.

By Mr. HOOPER, plaintiff's counsel in that suit:

Q. That lease from the Green Bay and Miss. Canal Co.—is the Green Bay and Miss. Canal Company mentioned at all?

A. I believe it is signed by Alexander Mitchell, Spaulding, and Morgan L. Martin.

(By Mr. ORDWAY, upon that trial:)

Q. Did you ever see these fragments of that lease?

(Fragments of original lease shown him.)

A. Yes, sir.

Q. Was it in that condition when you first saw it?

A. No, sir. * * *

Re-*a*xamined by Mr. MARINER, for the plaintiff:

Q. When was this talk with Smith?

A. If I remember right, in '66. I bought the property in issue when I got the lease of it. The lease did not read exactly right. A short time after I saw him, in '66. It was about the time I bought the property. Martin has made no claim on me during any
450 of the time I occupied this tract of land between the canal and river for any part of it."

Mr. Ordway now puts in the testimony of John Stovekin taken upon the second trial of the case G. B. & M. C. Company against the Hewitts and Reuters, at page 84 of printed case on this same subject. Being examined by Mr. Hooper, he testified as follows: "I live at Kaukauna. I have lived there since '65. I originally entered into the flouring-mill business there and since then saw-mill and paper business. I know the seven and one-half acre tract in question (this piece of land between the canal and river); have known it ever since I went there. * * * At the time I went there I was the only occupant of it or any part of it, except there was one or two houses on it that were occupied by lock-tenders. I occupied part of it by a flouring mill I bought of John Cord. I paid no rent. There never has been any rent called for on that property. It was a lease with a dollar a year, a nominal rent. In 1868 I believe I occupied first other of this tract for a saw-mill under a lease from the plaintiff (G. B. — M. C. Co.) of lot 7."

Mr. Ordway now puts in, subject to the objection of the G. B. & M. C. Company that the same is immaterial, the testimony of Morgan L. Martin taken upon the same second trial of the case last above referred to and found at page 104 of the printed case upon appeal to the Supreme Court. Being interrogated by Mr. Mariner, the witness said:

"Q. You say the water power and land together are very valuable; yet, if I understand you, you say if you owned the land and the improvement company owned the water power that neither would have any value. Do you mean to be so understood?

A. Well, it depends entirely upon one question, what rights a riparian owner has. There were always two opinions about
451 that. The Government entertained one and I entertained another. According to my judgment the land and water power were inseparable. I cannot conceive of such a thing as a separation. The water power, in my opinion, belongs to the land."

This ends that subject.

Mr. Ordway now puts in evidence the following from the book named "Record of proceedings, secretary's office, Fox & Wisconsin Improvement Company," now in the office of that company, in Appleton:

From Book One, page one: "Record of proceedings of the board of public works, first meeting, at Madison, September 4th, '48.

Present: All the members of the board, to wit: E. B. Estes, H. L. Dausman, A. S. Story, J. A. Bingham, and Curtis Reed.

Board organized by appointing Estes chairman and Reed secretary *pro tem.*

On motion of Mr. Story, Resolved, That Conde R. Allen be, and he hereby is, appointed chief engineer during the pleasure of the board at $1,800.00 a year for time actually engaged.

Adjourned until the 5th.

On the 5th, on motion of Dousman, the chief engineer is to begin forthwith the survey of the Fox and Wisconsin rivers, beginning at the westerly extremity of the proposed canal, at Portage City,

thence down Fox river to Green Bay, and thereafter from the place of beginning down the Wisconsin river to its mouth, with a view of a plan of an uninterrupted steam navigation by way from Lake Michigan to the Mississippi river, and report to this board at its next meeting."

Next appears upon the record communication of C. R. Alton, stating terms and his acceptance.

Board then adjourned September 5th to the first Monday in December, '48, but did not then meet.

"The board met at Madison on the 15th day of January, '49, being the date appointed by the governor, as authorized by the board at its first meeting.

452 The chief engineer made his report, which was accepted and recorded as follows: Plan should correspond with the size and depth of the two streams. Having these objects in view, it is believed that the following dimensions might be safely adopted, viz., a canal with 40 feet width of bottom, banks eight feet high, slopes one and one-half to one or two to one, according to the nature of the materials and calculated for a depth of four feet at usual low water; locks to correspond; * * * 125 feet long between the gates and thirty feet wide in the chamber. Steamboats adapted to locks of the following dimensions might be 110 feet long, 16 feet beam, and 20 feet across the guards, 80 tons capacity, exclusive of engine and machinery. Barges to be used as tows, Portage City lockage 3 and $\frac{83}{100}$ feet and a fine water power there if deemed desirable for the interest of the State. * * * Neenah river from Fort Winnebago to Lake Winnebago; * * * from Lake Winnebago to Green Bay. The main obstacles to the navigation of the Neenah occur between Lake Winnebago and Green Bay in the important rapids that are found at the following points, viz., Winnebago rapids (Neenah and Menasha), Grand chute (Appleton), Cedar rapids, Petite chute, Grand Kaukalin, and Rapids Crache and Des Peres. * * * The plan to be pursued * * * should be the construction of the necessary dams, lift-locks, and short lines of canal connecting with navigable waters above and below."

From the same book, on the 19th of January, '49, the board reported to the governor and recommended and approved of the foregoing report of Engineer Alton; which report to the governor is found on pages 6 and 7 of Book One, referred to.

"March 3d, '49.—Board met at Madison, and on March 5th, '49, chief engineer was appointed to superintend. May first, '49 (page 22 of the same book of records), board in session at Fort Winnebago and let the contract for guard-lock and lift-lock to Nelso McNeil at Portage City."

453 *As to Kaukauna.*

Report of J. Kipp Anderson, January, '52, chief engineer and superintendent, from page 321 of same Book One, report commencing at page 321, Book One aforesaid. As to Kaukauna, at page 323, continues as follows: "Work commenced middle of June,

'51. A large portion of the canal has been excavated. The protection wall on the upper section more than half finished. * * * At the upper end of the canal it is intended to place a guard-lock in order to protect the long line of canal between the dam and head of the first lift-lock, though the building of this lock will add to the cost of the work, yet, as it appears so requisite for its safety and protection and as it met with the heart- approbation of the consulting engineer, I have not hesitated to add it to the plan of the work." Reference to the Martin contract is found in report of the board to the governor, January 2nd, '52, at pages 306 and 307 of the same Book One.

On page four of same Book One appears the report of the estimate of C. R. Alton, chief engineer, under date of September 5th, '48.

Grand Kaukalin.

"One and one-half miles below the foot of the Petite chute is about the same length of rapids and will require a dam 660 feet in length, 5 feet high, and set of flood-gates, two locks of ten *ten* feet (each), two of nine feet (each), and one of eleven feet lift, and one and a half miles of canal."

Mr. Ordway now puts in evidence chapter 179 of the General Laws of Wisconsin for 1851, approved March 11th, 1851, the first section of which act is as follows:

SECTION 1. The governor is hereby authorized to accept the proposal made to him on the 31st of January, '51, by the Hon. Morgan L. Martin for the completion of the improvement of Fox river
454 between Green Bay and Lake Winnebago, and enter into contract with said Morgan L. Martin according to the terms and conditions thereof: Provided, that Morgan L. Martin shall give security satisfactory to the governor to complete said work on or before the first day of June, '53."

Mr. Ordway reads now, on behalf of clients represented by himself and Mr. Cary, the contract of Martin that the State made pursuant to the provisions of the last-mentioned act, and, as I understand it, pursuant to the recommendation and report of the engineers which I have quoted above from the records of the board of public works; which contract, with specifications, is found on pages 30 A to 30 P, inclusive, of the compilation of laws and documents relating to the hydraulic power of the Fox or Neenah river, compiled by the G. B. & M. Canal Company and printed in '81 (which has been in common use in these litigations and accepted as authentic).

Mr. Ordway states that the whole contract, together with all the specifications, *are* offered in evidence, calling attention particularly to the following part or parts thereof on page 30:

"*Fox and Wisconsin Improvements—Specifications for Excavation and Embankment.*

General description.

First specification.—The canal, when not otherwise directed, to be so constructed that the water shall be 44 feet wide on the bottom, sixty feet wide at the top water line, and four feet deep at ordinary stages of water in the streams, with such slopes preserved on the inner and outer faces of the banks as the chief engineer having charge of the work may direct. The towing-path bank shall be ten feet and the burm bank eight feet wide on top; the inside angles of the banks shall be from 4 to 5 feet and outside angles from 3 to 4 feet above top water line."

455 Mr. Ordway makes no further extracts from the contract or specifications now, but all parties will be at liberty to make such use of the whole as they please upon the argument.

Mr. Ordway next puts in evidence on behalf of the clients represented by himself individually and those represented by Mr. Cary and himself, touching the title to the islands numbered one, 2, 3, and 4 and the channels between the same, the following documents:

First. Receiver's receipt, commonly called duplicate, United States to Morgan L. Martin, dated September first, '35, with patent thereupon, dated August 10th, '37, to Sherman Page, assignee, for all of Islands One, 2, 3, and 4.

Second. Tax deed from Brown county to Matthew J. Meade, dated January 15th, '53, on a sale of '50; recorded February 25th, '54, in volume 4 of Deeds, page 239, Outagamie county, covering all of said islands.

Third. Tax deed from Brown county to M. J. Meade, dated May 8th, '55, acknowledged May 16th, '55, sale of '51; recorded in volume 5 of Deeds, page 440, Outagamie county, Wisconsin, covering all of said islands.

Fourth. Tax deed, Outagamie county to M. J. Meade, dated April 12th, '58, acknowledged April 12th, '58, sale of '55; recorded in volume 8 of Deeds, page 472, in Outagamie county, covering all of said Islands One, 2, 3, and 4.

Fifth. Tax deed, Outagamie county to M. A. Hunt, dated July 18th, '70, acknowledged at the same time, sale of '62; recorded in volume 21 of Deeds, page 486, Outagamie county, covering the Island Number Two.

Sixth. Tax deed, Outagamie county to M. J. Meade, dated July 30th, '72, acknowledged at the same time; recorded in volume 27 of Deeds, page 76, Outagamie county, covering the islands numbered one and three and four, sale of '69.

456 Seventh. Tax deed, Outagamie county to Matthew J. Meade, dated July 30th, '72, acknowledged at the same time on sale of '68; recorded in volume 27 of Deeds, page 77, same county, covering Islands Number One, Three, and Four.

Eighth. Next a warranty deed from M. J. Meade and Harriet, his wife, to N. M. Edwards, dated May 5th, '73, acknowledged May 15th, same year; consideration, $800.00, and recorded in volume 32 of Deeds, page 543, same county, covering the undivided half of Kaukauna islands numbered one, three, and four.

Ninth. Tax deed, Outagamie county to M. A. Hunt, dated and acknowledged February 23d, '75, on tax sale of '69; recorded in volume 33 of Deeds, page 82, same county, covering Island Number Two.

Tenth. Outagamie county to M. A. Hunt, dated and acknowledged Feb. 23d, '75, on tax sale of '70; recorded in volume 33, page 83, Outagamie county, and covering the Kaukauna Island Number Two.

Eleventh. Tax deed, Outagamie county to Anna Hunt, dated and acknowledged Feb. 23d, '75, on the sale of '67; recorded, volume 33 of Deeds, page 84, Outagamie county, covering Island Number Two.

Twelfth. Tax deed, Outagamie county to M. A Hunt, same date, and acknowledged the same date on the tax sale of '68; recorded, volume 33 of Deeds, page 85, Outagamie county, covering Island Number Two.

Mr. Ordway next offers a warranty deed from M. J. Meade and Harriet, his wife, to Henry Hewitt, Jr., dated April 9th, '80, acknowledged April 20th, '80, and recorded in volume 47 of Deeds, page 428, Outagamie county. The description is substantially as follows: "The undivided half of that portion of Island Number Three lying east of a line beginning at a cedar tree agreed upon, near the head of the island, thence southeasterly to the first
457 cross-channel, so as to divide the upper part of Island Number Three that is above said cross-channel into two equal parts as to area of dry land. It is fully understood in conveying the above portion of Island Number Three that the development of the water power in the east channel is not to interfere with the flow of water in the west channel."

Next a warranty deed from M. J. Meade and Harriet, his wife, to Henry Hewitt, Jr., and William P. Hewitt, dated September 8th, '80, acknowledged September 13th, '80, and recorded in volume 48 of Deeds, page 105, Outagamie county, with the following description: The undivided half of part Island Number Three, commencing at the first angle upstream from the lower waste weir on Kaukauna Island Number Three, Meade & Edwards' water power, thence running south 23 degrees 40 minutes east 362 feet down and along the stream to the foot of the iron monument in rock bed; thence north 59 degrees east 414 feet down and along stream between Islands Number Two and Three; thence to a point 362 feet, which point is north 59 degrees east 314 feet from beginning; thence south 59 degrees west 314 feet to the place of beginning, three acres, more or less, with the right to use 325-horse power thereon; also right to use and maintain the channel below 25 feet in width next to cent. for tail race and privilege of excavating, if necessary.

Mr. Ordway next offers a quitclaim deed from M. J. Meade and

Harriet, his wife, to M. A. Hunt, dated September 17th, '80, acknowledged September 25th, '80; recorded in volume 50 of Deeds, page 76, covering Kaukauna Island Number Two.

Next offer a warranty deed from M. J. Meade and wife to Kaukauna Water Power Company, dated December 29th, '80, acknowledged December 30th, '80; recorded in volume 48 of Deeds, page 345, covering the other property; also the undivided half of
458 a certain strip of land 25 feet in width on the southwesterly side of Island Number Four, commencing at a point on the northwesterly end of Island Number Four, extending in a southeasterly direction along the margin of said island and 25 feet distant or inshore from the high-water mark to a point in the *slew* or slaughter-house channel, so called, said point being 17 feet easterly from a certain white-oak stump standing near the shore or south channel of Fox river, it being the intention of this deed to convey the undivided half of a strip of land extending 25 feet in width and beyond high water along the southwesterly side of island, extending from the head or upper end of the island to the slaughter-house channel, whether the same is included in the platted part of Island Number Four or not, together with all riparian and water rights thereto belonging; and also an undivided 25 feet extending from the northwesterly end of said Island Number Four in an easterly direction and along the northerly side of said island to the easterly main Kaukauna bridge or easterly side of Lawe street, being 12½ feet in width on each side of the center line now staked, said last-mentioned piece being intended as a right of way for a railroad track; also an undivided half of Island Number One, together with all riparian, water, or village rights thereto belonging.

Next offer in evidence a quitclaim deed from Anna Hunt to M. A. Hunt, acknowledged the same date; recorded in volume 60 of Deeds, page 637, covering all of Kaukauna Island Number 2 aforesaid.

Next offer in evidence a warranty deed from M. A. Hunt, a single man, to the Kaukauna Water Power Company, dated and acknowledged December 30th, '86; recorded in volume 66 of Deeds, page 405, conveying Kaukauna Island Number 2 and all riparian rights, water rights, and water power and privileges appurtenant and belonging to the said island.

459 Next offer in evidence a warranty deed from Harriet S. Edwards and N. M. Edwards, her husband, to the Kaukauna Water Power Company, dated and acknowledged December 30th, '86; recorded in volume 67 of Deeds, page 3, Outagamie county; covering an undivided portion of the bank of Kaukauna Islands Number 3 and 4, but for particulars will have to refer to deed.

Next offer a warranty deed from M. J. Meade and Harriet, his wife, dated and acknowledged January 3d, '87; recorded in volume 67 of Deeds, page ten, Outagamie county; conveying the undivided half of most, *of* if not all, of the same lands covered by the deed last aforesaid of Mr. and Mrs. Edwards, referring to the description in the deed for particulars; which deed, together with that down to slaughter-house channel, together with the deed from Hunt,

conveyed to the Kaukauna Water Power Company an undivided interest in all of the banks of the islands mentioned, One, 2, 3, and 4.

Adjourned until nine o'clock, Saturday morning.

SATURDAY MORNING, *October First*, 1892.

Met at the judge's chambers pursuant to adjournment yesterday.

Mr. Ordway, in behalf of the clients represented by himself individually and by himself and Mr. Cary, puts in evidence, in connection with the proof yesterday of the title of George W. Lawe to the north bank of the north channel of the Fox river, a patent from the United States to Paul Du Charme, dated 30th of September, '35; recorded in volume one of Deeds, on pages 106 and 108, inclusive, in the office of the register of deeds for Outagamie county; covering or granting, among other property, farm lot or private claim number one, at Kaukauna, on the northerly side of the river.

Mr. Ordway offers the testimony of John Stovekin as to the lease mentioned at folio 35 of the answer to the cross-bill as a
460 lease from the G. B. & M. C. Company to John Jansen, stated in the answer to be of about one-hundred-horse power, and, upon suggestion that the lease might only have been of fifty-horse power, puts in the testimony of John Stovekin taken upon the trial of the case G. B. & M. C. Company against the Hewitts and Reuters, which went to the supreme court of Wisconsin, and the testimony is read from the printed case upon that appeal, commencing at page 44, where, upon being examined by Mr. Moses Hooper, — testified as follows: "I live at Kaukauna; have lived there since '66. I know the seven-and-a-half acre tract in question; have known it ever since I went there. At the time I went there I was the only occupant of it or any part of it, except there were one or two houses on it that were occupied by lock-tenders. * * * In '68 I believe I occupied first other of this tract for a saw-mill under a lease from the plaintiff, G. B. & M. C. Company, of lot 7; that mill has stood there ever since, and I believe has been occupied ever since under that lease." * * * (That was up to '82 at the time the testimony was being taken.)

It is stipulated that in August, '82, a lease was made by the Green Bay & Miss. Canal Company to John Jansen of lot 7, block one, with 50-horse power of water, to run for five years, which at about its expiration was renewed for five years more.

Mr. Ordway continues the testimony of John Stovekin, found at page 46 of the same printed case, with reference to the same lease of water upon lot 7, as follows: "The lease from the plaintiff of lot 7 was written and issued to the parties, but through some neglect on my part was never signed by the plaintiff—has not been up to the present time, that I know of. I am interested still in the saw-mill, but not alone. The first five years' rent was $50.00 (per year); balance five years, $125.00 (per year); that has been paid without any written lease; it is not paid up late years; it was paid originally."

461 Mr. Ordway with reference to the lease of water from the canal company to the Reuters, mentioned in the answer of the Kaukauna Water Power Company to the cross complaint, in folio 35 thereof, puts in the testimony of Alexander Reuter from the same printed case before the supreme court above mentioned, commencing on page 35 thereof: "I live now and have lived for 12 years in the town of Kaukauna; I know the seven and one-half acres between the canal and river and have known it ever since we moved there. When we first went there there was a flouring mill on it, saw-mill, and two houses. I don't know under whose claim of title the flouring mill and saw-mill were there. We commenced operations there the latter part of March, '69, under an agreement with A. L. Smith, of Appleton. We had made an agreement with him to have a lease for 20 years; he was agent for the plaintiff. After the first arrangement we took possession of the west half of lot nine and east half of lot eight; we took possession of that the latter part of March, '69. We took possession of more in the winter of '71 and '72."

On the same subject Mr. Ordway puts in the testimony of Peter Reuter, commencing at the bottom of page 29 of the same printed case: "I know the seven and one-half acres of land at Kaukauna lying between the canal and the river and platted by the Fox and Wisconsin Improvement Company as lots one to twelve, in the town of Kaukauna. I live in that town; I have lived there about twelve years and four months, and have known that land ever since I was down there. I have been in possession of part of—that is, I and my brother are in company; we have got a lease of the east half of lot 8 and west half of lot nine, a written lease—printed and written. Then we have a verbal lease, where we pay rent on the west half of lot 8; I don't know exactly what the date of our lease is; I think it was drawn up in '70. * * * On reflection
462 I could not say whether the written lease was in '69 or '70; I think it was in '69. We had been in occupation of the lots before the lease was made. We took possession in March, '69. * * * The witness upon cross-examination testified: We made but one written lease with the plaintiff. That was in '69; I think May 21st, '69. The lots were vacant when we took that lease. We put, I think, a hub and spoke factory * * * on them. I recollect the terms of the lease. We have from the plaintiff on east half of lot 8 and west half of nine. The first five years we are to pay $50 a year and second five years $200 a year, I think, and last ten years I think is $250 a year. It was a twenty-year lease on one of their regular printed forms. The verbal lease of the west half of lot 8 was for ten years, $50 a year; never put in writing."

It is stipulated in reference to lease number three, mentioned in folio 35 of the same answer to cross-complaint, which was a lease by the Green Bay & Miss. Canal Company to one Burns, dated in or about November, '80, of 30-horse power of water to be used on lot one of said Jennie plat for the propelling of a grist or flour mill, which lease was assigned to A. L. Smith on or about the 18th of September, '82, which lease was renewed for ten years from the first

of October, '90, with the right to use an additional 30-horse power at a rate of rent fixed in the addition.

By Mr. HOOPER: Plaintiff admits in favor of the G. B. & M. C. Company cross-bill that about the first of April, '79, the G. B. & M. Canal Company leased to Doane & Hoberg lot 5 with 50-horse power of water power to be drawn from the canal; that on or about the first of April, '89, the Green Bay & Miss. Canal Company continued said lease by making the lease to Oscar Thilmany,
463 successor to Doane & Hoberg, of lot 5 with 250-horse power of water.

It is admitted that on the first of October, '91, the G. B. & M. C. Company leased to the Kaukauna Electric Light Company lot 8, block one, one-hundred-horse power of water for six years. The other defendants contending against the cross-bill of the Green Bay & Miss. Canal Company unite in the same admission.

With reference to the ownership of the south bank of the Fox river at and above the present Government dam, and the ownership of the bank of the south channel of the river from the south end of the Government dam and downstream along the south channel to slack water below the entire Kaukauna rapids, Mr. Ordway, on behalf of the defendants represented by himself and Mr. Cary as stated in the pleadings in this case, puts in the following testimony or evidence: As to the ownership of the northerly ends of lots number six and seven upstream from the Government dam, the title thereto at the time of the commencement of this action was in the Kaukauna Water Power Company, subject to such rights therein as the G. B. & M. C. Company had under a release thereof from John Hunt to the Fox & Wisconsin Improvement Company dated October 6th, '54. The title to that part of said lot- 6 and 7 on the south side of the river aforesaid came to the Kaukauna Water Power Company through a chain commencing in '35, when the same were owned in fee by the United States, and as to such ownership Mr. Ordway reads and puts in evidence the following statements from the printed case or record in the suit of the Green Bay & Miss. Canal Company against the Kaukauna Water Power Company upon appeal thereof to the Supreme Court of the United States, commencing at the foot of page 19 of said record as follows:
"That on or about the first of Sept., '35, one Denniston purchased from the United States said lots 6 and 7; a duplicate was
464 then delivered to him therefor dated on or about said last-mentioned date; that the same lots were afterwards patented upon the said entry, and that these defendants (Kaukauna Water Power Company and others holding under them) held a claim of title under and in privity with said John Dennison (Denniston), their title coming through the said John Hunt."

Stipulated that the title to the river end of said lots 6 and 7 was in the Kaukauna Water Power Company at the time of the commencement of this suit in which this testimony is being taken and so continues and has so continued down to the present time, subject to such easements or rights, if any, as the other facts in the case

show the Green Bay & Miss. Canal Company to have acquired therein.

Mr. Ordway further continues the testimony as to the ownership of the northwesterly or river end of lot 5 upon the south side of the river, on which the present Government dam abuts, and reads as evidence of title from page 789 of the printed Record of the case in the Supreme Court of the United States above referred to as follows: "It is admitted for the purpose of thisa ction that the United States, being the owner of lot 5, section 22, town. 21 north, of range 18 east, sold the same September first, '33, to one Garritt V. Dennison by duplicate, which he assigned to Joshua Hathway, Jr., who received a patent from the United States therefor, which bears date August 10th, '37, recorded in volume 2 of Deeds, page 206, in the register's office of Outagamie county, who conveyed to Samuel Beardsley by warranty deed dated April 26th, '36, who held the title until his death, May 6th, '60; that his heirs conveyed said lot to Stephen Frisby October 16th, '71, who conveyed his title to the said lot, through several mesne conveyances, to the defendant Kaukauna Water Power Company on the 14th of May, '80, sub-
465 ject to such easements as the other proofs in the case show have become, if any, vested in the Green Bay & Miss. Canal Company."

Mr. Ordway continues: "The said patent was without exceptions and was in the following language:

"To all to whom these presents shall come, Greeting:

Whereas, Joshua Hathaway Jr., assignee of Garrett V. Dennison, has deposited in the General Land Office of the United States a certified record of the land office at Green Bay whereby it appears that after payment has been made by Garrett V. Dennison according to the provisions of an act of Congress of 1820, entitled an act to make further provisions for the sale of public lands, for lot number 5 fractional section 22, town. 21 north of range 18 east, in the district of lands subject to sale, at Green Bay, Michigan Territory, containing 81 acres and $\frac{54}{100}$, according to the official survey of said land returned to the General Land Office by the surveyor general, which said certificate has been purchased of said Garrett V. Dennison: Now know ye that the United States of America in consideration of the premises and in conformity with the several acts of Congress in such case made and provided have given and granted and by these presents do give and grant unto the said Joshua Hathaway Jr., and to his heirs the said premises above described; to have and to hold the same together with all the rights, privileges, communities, franchises and appurtenances of whatever nature thereto belonging, to the said Joshua Hathaway, to his heirs and assigns forever.

In testimony whereof I Martin Van Buren, President of the United States of America, have caused these letters to be made patent and the seal of the General Land Office to be hereunto affixed.

Given under my hand in the city of Washington on the 10th of

August '37, and of the Independence of the United States the sixty-second.

By the President:

MARTIN VAN BUREN,
By A. VAN BUREN, *Secretary.*

[L. S.] J. F. WILSON,
Recorder of the General Land Office.

466 Recorded in volume one, page 76, January 27th, '54, at two o'clock p. m.

B. FOLLETT, *Register.*"

As to lot four, the same was entered from the United States by said Gerrett V. Denniston September first, '35, and the duplicate assigned to Joshua Hathaway, Jr., and the patent thereupon issued to Joshua Hathaway, Jr., by the United States under date of August 10th, '37. The title to said lot four, in connection with the title to the said lot 5 above mentioned, remained in the said Joshua Hathaway, Jr., until April 20th, '36, when he conveyed to Samuel Beardsley. The title remained in Beardsley and his heirs until October, '71, when the same was conveyed to one Stephen W. Frisby.

Stipulated that in '72 the title to the north or river end of lots one to eight, inclusive, in section 21, town. 21, range 18, and the north or river end of lots one to five, inclusive, in section 22 of the same town. and range, become vested in F. W. Frisby, and the title to all these river end of all these lots has continued in the same ownership, either entire or in fractions, the owners owning as tenants in common the whole property from '72 to this time. These lots mentioned reach from above the upper or Government dam at Kaukauna to the slack water below the Kaukauna rapids on the south side of the river, and at the time of the commencement of this action and also at the present time owned by the Kaukauna Water Power Company, subject to such easements therein, as other proofs may show, if any, to be in the G. B. & M. Canal Co.

And it is stipulated that there was no opening through either State or Government dam or the extension thereof on the south side of the river until that made by the Kaukauna Water Power Company for its water-power canal.

EDWARD RUGER, a witness for the defendants, being duly sworn, testified as follows:

Examined by Mr. ORDWAY:

467 Q. Where do you live?

A. At Janesville, Wisconsin.

Q. Occupation is what?

A. Civil and hydraulic engineer.

Q. How long have you been engaged in that business?

A. I have been engaged in civil engineering for about 35 years.

Q. Have you given attention to hydraulic engineering any part of that time?

A. I have.

Q. Since about when?

A. About 18 years, I think, very largely; some previous to that; but I did not make it a specialty.

Q. State about how continuously you have been engaged in hydraulic engineering, measuring, leveling, estimating, and doing that kind of work in that connection.

A. Very largely that way for 12 or 18 years, I should think, as I recollect now; done some work in the meantime.

Q. Did you do very considerable of that kind of work on the Rock river, in Janesville, in connection with the water powers?

A. Yes, sir; I have done work on the Rock river.

Q. Did you make the estimates and measurements and the hydraulic-engineering work on behalf of the Jackson Milling Company at Grand Rapids a couple of years ago?

A. I did.

Q. At the request of The Kaukauna Water Power Company, one of the defendants in the suit in which this testimony is being taken, did you during the past year do certain work in the way of hydraulic engineering and making of measurements and estimates upon the Kaukauna rapids at Kaukauna, in this county?

A. I did at Kaukauna, spending a considerable portion of the time from the middle of May down to about the first of August. I was there at different times. I was there from about May 20th to the last of May, and then I was there again afterwards.

Q. Was you furnished by myself, as a history of those rapids and a history of the general lay of them, with certain maps which have been made by Captain Edwards?

A. I was.

Q. Did you learn from those maps and memoranda of the bench-mark from which he made his surveys as stated on those maps?

A. Yes, sir.

Q. Did you in your reports to myself, representing the
468 Kaukauna Water Power Company, show measurements down the rapids from the Government dam at Kaukauna, having a reference to that bench-mark?

A. I did.

Q. Did you measure the depth of and inclination of the various channels from the Government dam down to and below the various dams on these channels during that period?

A. I did not measure the depth or head or fall. I measured the fall of the surface of the water.

Q. On or about the 23d of May, '92, did you take the measurements of the fall of the river from at about the Government dam downstream—some or all of the channels?

A. I did down on what I should say would be called the main channel or north channel on May 23d.

Q. Give me the fall of water at that time at the Government dam in your own language.

A. 55 feet and $\frac{357}{1000}$.

Q. Can you give me the head of water at the south end of the Government dam at the surface—in other words, the difference be-

tween the surface of the water above the dam and the surface of the water immediately below the dam—south end, on May 24th, 1892? If so, what was it?

A. On the 24th of May the head was eight and five hundred and eighty-seven thousandths of a foot at the northerly end of the dam. The head at the southerly end of the dam was 7 and $\frac{298}{1000}$ feet on May 24th as I found it.

Q. Did you measure down the south side—the south channel—from the south end of the Government dam?

A. I did take levels down.

Q. Down to a distance of 1,720 feet or thereabouts below the south end of the dam—opposite to where the tail water of the Smith flouring mill is discharged into the north channel?

A. Yes; that is the distance I made it.

Q. What was the fall from the immediate foot of the Govenment dam down to that point, 1,720 feet down the south channel, said to be opposite the discharge of the wheels of the red mill?

A. Six feet and $\frac{24}{100}$ feet on the southerly side of the river from just below the southerly end of the dam to a point, as near as I could judge, opposite the red mill, called the Smith mill.

469 The distance that I measured from the southerly end of the dam down to that point that I judged to be opposite was 1,720 feet.

Q. What is the fall from the foot of the Government dam at that time down on the north channel down to the tail discharge of the same red mill?

A. That I made five and $\frac{316}{1000}$ feet. That is the northerly end of the dam.

Q. What was the fall at the same time on the northerly side from the foot of the Government dam to the discharge of the wheels and tail water of the Kaukauna Paper & Pulp Company?

A. Nine and $\frac{795}{1000}$ feet. The water was held away from that by a temporary dam across the river.

Q. What was the fall at the same time between the foot of the Government dam on the north side of the river and the surface of the tail water in the main tail race at the place of discharge of the Thilmany Pulp & Paper Company?

A. Ten feet and two one-hundredths, mill not in operation. The mill was in operation in case of the American Pulp & Paper Company.

Q. What was the fall of the surface of the water from below the Government dam at north end to the tail discharge of sash, door, & blind factory in April at the same time?

A. Ten and $\frac{276}{1000}$ feet.

Q. Same question as to the electric light plant at same time, mill not in operation.

A. 11 (eleven) and $\frac{4}{100}$ feet.

Q. Did you take the amount of fall from the foot of the Government dam down the south channel to slack water?

A. I did pretty near.

Q. What was the head of the fall of water at that date of the Phillips & Rufus, on the middle channel, formerly Kelso's?

A. 17 and one-tenth feet, mill not in operation. The fall was 16 and $\frac{723}{1000}$ feet at the Union pulp mill, mill in operation, May 20th, '92.

Q. What was the fall of the surface of the water above the Government dam to the surface of the water at the same time at the discharge of the Fox River pulp mill, middle channel?

A. 15 and $\frac{818}{1000}$ feet.

470 Q. What was the fall on the 21st of May, when you measured, in the tail race, of the surface of the water in the tail race, at the Fox River pulp mill from its point of discharge at the mill to where it discharges into the river?

A. Six and $\frac{144}{1000}$ feet from the gage in the rear part of the mill to the river, to the intersection of the tail race with the main river.

Q. What is the fall or difference between the surface of water on May 25th, '92, at the Badger mill—surface of water in the flume and surface of water in the tail race—with the mill in operation?

A. 17 and $\frac{518}{1000}$ feet. That was on May 25th.

Q. On May 26th what was the fall at the Kaukauna Paper Company's mill at the point of discharge?

A. Take from the surface of water in the United States canal from the head of the Kaukauna paper mill, 18 and $\frac{219}{1000}$ feet, mill running.

Q. What was the difference between the clear head and fall of those mills on the Government canal on the Kaukauna side? Did you find a difference between the head and fall of those various mills, some greater and some less?

A. Yes, sir; some I did. There is a difference in the head.

Q. What was the occasion of that difference?

A. The difference in the head may be due to several causes: One is the draft of the head-water and greater flow in the tail water from one mill to another or may be owing to the great draught of water makes a little lowering of the head-water by the mill.

Q. Was there a temporary dam across the river near those works?

A. There is; running from near the Smith mill along downstream a ways and then across the river. There is a marked difference in elevation of the tail water of the two last-named mills—the red flouring mill and the large paper mill of the Van Nortwicks, next below the highways—viz., 4 and $\frac{499}{1000}$ feet, almost wholly due to the dam which shuts out the river from the Kaukauna paper-mill tail race. Said dam also causes the water of the river to be
471 higher at the discharge of Smith's flouring mill than it otherwise would be.

Q. Did you measure the lift or fall of the upper lock just opposite the mills?

A. I did.

Q. What was the lift as you found it?

A. Nine and $\frac{941}{1000}$ feet on the 26th of May, '92; evidently intended for a ten-feet lift.

Q. As to the fall at the Outagamie Paper Company's mill, other-

wise called the Patton mill or Patton & Priest mill, did you take the measurements of the head at that mill on that day?

A. I did.

Q. How far downstream, from the mill wall downstream, is the railway siding?

A. I could not state. It is in the rear of the mill. I took the head of the water at the gate.

Q. The measurement was to the surface of the water in the tail race of said mill. About how far down from the wall of the mill in that tail race was that measurement?

A. I should say it was from where I took it probably ten or 15 feet. It is a mere matter of judgment now. I did not take any notice of it particularly.

Q. What was the run of water in the tail race—rapid or dead?

A. My recollection is there was quite a flow from the mill.

Q. Did you measure the fall in the river from that point of measurement down to slack water?

A. I did not go clear to slack water.

Q. That is in the vicinity of slack water?

A. I should think not. I should say there was quite a fall from that to slack water. There was 22 and $\frac{889}{1000}$ feet difference between the surface of the water above and the surface of the water in the tail race at the point mentioned of the Patton mill, mill running.

Cross-examination by Mr. HOOPER:

Q. You say there is a temporary dam resting on the north bank of the river between the tail race of the Smith flouring mill and the Kaukauna Pulp & Paper Company's mill?

A. There was a temporary dam that held the river water away from the tail water of the Kaukauna Pulp & Paper Company's mill when I was there.

472 Q. Is that a dam the water is subject to overflow?

A. Part of it, I should judge, it was overflowed; a large part would be; the needles of the dam, they had pulled out of this.

Q. Where does the other end of that dam rest?

A. I did not go to the other end of it and did not make a measurement. I should judge from my recollection of it that it rested on an island between what is called the middle and north channel.

Q. What is the evident intention of that dam?

A. I could not say the intention; it was apparently to make a better head for the middle channel and keep the water out of the tail races of the mills that take water from the United States canal; to make a better head for them.

Q. To protect the tail races of the mills below it on the north channel and increase the head in the Meade & Edwards power?

A. It would have that effect both ways.

Q. That was the apparent intention of it?

A. To my mind it was; yes, sir.

Q. At the time you was there surveying, was there a dam across the upper end of the south channel?

A. There was a temporary dam there; a sort of a stone-horse dam, and broken through at one place, running across the head of the south channel.

Q. Running from the head of the upper island to the south shore of the river?

A. Yes; running across from that south channel.

Q. How far below the Government dam did that dam strike the south shore?

A. That connected, as I recall it, with the stone wall and large bank that ran up; went on the bank clear below the United States dam, and there was a stone wall on the river face and bank behind.

Q. Was that dam of sufficient height and strength to prevent the water, in an ordinary stage of water, from running in the south channel from the main river?

A. Some water running through; maybe the leakage.

(Question repeated.)

A. I should think it would; it would obstruct it very largely.

Q. What would pass in would be leakage from this dam, would it?

A. Substantially. I think there was one place there was
473 a break in the dam, besides two planks off on the water face.

Q. This dam was planked on the upper face, was it?

A. I think it was.

Q. About how high was the dam?

A. My recollection now would be 3 or 4 feet; I would not state that positively.

Q. Was the dam conveniently constructed as a dam to prevent the flowing of water into the south channel or simply to raise the water somewhere?

A. I should suppose it was constructed to prevent the flow of water in the south channel.

Q. Its construction would indicate it was not expected that water would flow over it?

A. I should not suppose it was expected that water would flow over it.

Q. What is the south channel below that dam used for?

A. I should say largely below the bridge as a tail discharge from the mills.

Q. Is it not the fact that all the water below this dam across the head of the south channel is tail water?

A. I think so. The machine works discharge so as to flow in this south channel from just below this temporary dam; that is all the mill I recollect above the highway bridge that so discharges.

Q. How far is the highway bridge from this dam across the south channel?

A. At the southerly end quite a long distance; at the northerly end but a little distance.

Q. A little distance, you say?

A. Four to six rods, this northerly end; I mean the highway bridge.

By Mr. GREEN:

Q. Did you notice the formation of the shores at the ends of this Government dam generally?

A. I did.

Q. Could the water power made by that dam, as a matter of engineering, be used at or near the dam itself, the owners of the power owning the shores below?

A. I suppose the water could be used at the dam if they had land enough to build mills and a chance to make tail races. I don't know anything about the owners of the land.

474 Q. I am assuming that the owners of the water power had the land below the dam. Is there any engineering reason in the shape of the shores or formation that would prevent the use of the water at or near the dam?

A. On the north shore there was very little land to put mills. They are put on the opposite side of the race.

Q. There is no reason why they could not be used on the south shore?

A. There could be mills on the south shore by taking water and letting them discharge into the south channel. There would be no physical trouble about that.

Q. How long a distance would it take, assuming 2,500-horse power at the dam—how long a distance would it require below the dam, assuming the owners of the power had the lands to use the whole of that power?

A. That would depend altogether on how big a mill they built; how many wheels they had in it; what the mills were built to do.

By Mr. ORDWAY:

Q. About what was the height*h* of that temporary dam—cross-dam—from the red mill, which extended over on Island Number Three? You said here that the water between the two levels is about 4 and $\frac{479}{1000}$ feet—about four and one-half feet. What was about the height*h* of that dam?

A. I think about where the railroad crosses it upstream inside of it, I think it was about that same height*h*. I think the water was about the top of the dam. Farther downstream there were the needles. They could be seen above the water.

Adjourned to meet, if necessary, on notice.

Febr'y 17, 1893.

(Signed) HOOPER & HOOPER,
For Plaintiff.
P. R. BARNES,
Per M. H., *For Kelso and Others.*
E. MARINER &
B. J. STEVENS,
Att'ys for G. B. & M. Co.
DAVID S. ORDWAY,
Att'y for Henry Hewitt, Jr., & Wm. P. Hewitt.
ALFRED L. CARY &
DAVID S. ORDWAY,
Att'ys for Kaukauna Water Power Co. et al., Represented by Appearance & Answers Herein.

475 " D," referred to on page 9.

Kaukauna Leases.

Expired.

Cord & Gray, 100 h. p., sixty years, renewable, dated June 3rd, 1861, lot 3, block 1 ; surrendered and cancelled July 1st, 1882.

Henry Frambach, July 1st, 1882, 200 h. p., $750 per annum, lots 2 and 3, block 1, fifteen years.

Frambach Paper Co., July 1st, 1883, 200 h. p., lot 4, block 1, $1,000 per annum, fourteen years. These two last-mentioned leases are assigned to the Kaukauna Paper Co. and are given below.

Reuter Bros., May 1st, 1869, 50 h. p., twenty years, $200 per annum ; expired.

Doane & Hoberg, Jan. 2nd, 1879, 50 h. p., $280 per annum, ten years.

Am. Pulp Co., successor to Doane & Hoberg, 150 h. p., $750 per annum, Jan. 1st, 1884, ten years, and now the Oscar Thilmany lease with condition as in his lease.

Kaukauna Lease-.

In force.

Oscar Byrns, Oct. 1st, 1880, 30 h. p., ten years at $150 per annum, lot 1, block 1 ; renewed on Jan. 14th, 1892, for ten years, 60 h. p., at $360 per annum.

Oscar Thilmany, April 1st, 1889, 250 h. p., ten years at $1,500 per annum, lot 5 and W. ½ of lot 6, block 1.

John Jansen, August 1st, 1882, 50 h. p., ten years at $300 per annum, lot 7, block 1 ; renewed on August 1st, 1892, five years at $300 per annum.

Kaukauna Electric Light Co., Oct. 1st, 1891, six years, 100 h. p., N. ½ of lot 8, block 1.

Union Pulp Co., Aug. 1st, 1882, 600 h. p., ten years at $1,800 per annum ; island water power.

Geo. Kelso (Reese Pulp Co.), Aug. 1st, 1881, 300 h. p., fifteen years at $900 per annum ; island water power.

476 Kaukauna Paper Co., 200 h. p., expires July 1st, 1897, $750 per annum, lots 2 and 3, block 1.

Kaukauna Paper Co., 200 h. p. at $1,000 per annum, expires July 1st, 1897, lots 3 and 4, block 1.

477 West, Tibbets & Packard to Fox & Wis. Imp't Co. } Lease. Copy referred to at page 15.

Articles of agreement made and concluded and agreed by and between Edward West, Jackson Tibbets, and Frederick Packard, of Appleton, in the county of Outagamie and State of Wisconsin, parties of the first part, and the president and directors of the Fox and Wisconsin Improvement Company, a corporation existing under the laws of the State of Wisconsin, and Alexander Mitchell, of Milwaukee; Chas. Butler and Alexander Spaulding, of the city of New York, trustees of said company, parties of the second part.

First. The said parties of the first part being or claiming to be the owners in fee of lots numbered one and two of section thirty-five and lot two in section thirty-six and of the island known as Grand Chute island all in township number twenty-one north, range seventeen east in said county of Outagamie, in consideration of one dollar to them in hand paid at and before the execution of these articles and of the covenants and agreements hereinafter mentioned to be performed by the said company, their successors and assigns do jointly and each for himself and for their and each of their heirs and assigns, release and discharge the said Fox & Wisconsin Improvement Company from all damages arising or accruing to them or either of them out of the flowing or other injury to all or any portion of the lands above described by occasion of the dams, canal locks, or other improvements made and constructed by the State of Wisconsin or by the said company or which may hereafter be made or constructed by said company, their successors or assigns — pursuance of the plans adopted or to be adopted by said company as hereinafter specified and hereto annexed. And the said parties first aforesaid in consideration as aforesaid do for themselves covenant and agree that the said company shall have and they are hereby granted and conveyed the right and privilege to maintain forever the dams, locks, canal and other improvements made or to be made and created and constructed by them, their successors and assigns upon said premises according to the plans aforesaid free and clear of any claim or claims for damages for the right of way or for flowing in or upon said premises or any part thereof. And that the said company, their successors and assigns may also take, occupy and use as aforesaid the necessary quantity of land to enable them to straighten the tow-path, bank of the canal and to construct thereby a basin on lots numbered one and two above described, according to the said plans within five years from this date. And in case of their failure to do so all their right and claims to use the said land shall revert to the said parties of the first part or in case they shall cease to maintain at any time the said tow-path and basin according to said plans the said land shall revert to the said parties of the first part. And the said parties of the first part further covenant and agree that the said company their successors and assigns may excavate and construct the tail race necessary to convey the

surplus water which may be discharged from the canal and basin between the two upper locks at Grand Chute over and across said lots numbered one and two in such course as the parties of the first part may designate and into the Fox river at or near the foot of the island or the third lock at Grand Chute.

Second. The said Fox and Wisconsin Improvement Company on their part on the consideration of the release and covenants hereinbefore named and agreed upon by the said parties of the first part do hereby grant and convey to the said parties (to be held by each in proportion to his interest in the lands above described) their heirs and assigns the right of raising the water in the river by means of such dam or dams as they may see fit to construct and
478 by means of an embankment which they are hereby licensed to construct and maintain with the necessary width and ditch along and upon the south bank of the river above the plank road so as to set back the water not further up at any season than the upper line of Dunn and Brewster's lot and of flowing the south bank up to that point, and of passing over Mill street as laid down on the maps and plans of the Grand Chute water power made by said company to repair said bank if necessary, and the said company their successors and assigns further covenant and agree for the consideration aforesaid to furnish the parties of the first part their heirs and assigns so soon as the basin above specified shall have been constructed a quantity of water to be taken and used from said basin upon the lands owned by said parties of the first part their heirs and assigns sufficient to create one-hundred-and-fifty-horse power the bulkheads for the use of said water to be constructed and maintained by the said parties of the first part their heirs and assigns in such manner as shall not interfere with the use of the basin for the purposes of navigation and under the direction of the chief engineer or superintendent now or hereafter to be appointed by said company their successors or assigns and to be kept by the said parties of the first part their heirs or assigns in perfect repair at all times. And if the parties of the first part their heirs or assigns shall neglect or refuse to make such repairs it shall be lawful for said company, their successors or assigns by their engineer or superintendent and workmen to enter upon the premises and shut off the water and make such repairs the said parties of the first part their heirs and assigns being liable therefor and for all damages arising from such neglect or refusal to the said company their successors or assigns provided that in case it shall become necessary for making repairs to their canal or locks to draw off the water from the said basin the same may be done by direction of said company their successors or assigns or their engineer or superintendent and no claim for damages shall arise to said parties of the first part their heirs or assigns for stopping of water during the time necessarily employed in making such repairs.

Third. And it is further mutually agreed between the parties that if at any time hereafter the said company their successors or assigns shall desire to use any of the surplus water in said basin for hydraulic purposes and to take the water thus used on the shore side of the

second lock they shall at all times have the privilege of so doing and of taking possession of and using free of expense the necessary land along the shore bank and between the same and the proposed street parallel to the canal for the erection of any buildings or machinery of any kind or description necessary to use the same and that all the surplus water in the level below said second lock except the quantity heretofore contracted to J. M. Stebbins of 25-horse power may be drawn and used by the said parties of the first part their heirs and assigns from the shore bank at the third lock, the bulkheads, to use the same being subject at all times to the same conditions as hereinbefore specified in reference to the bulkheads for use of water from the basin provided however and this last stipulation is upon the express condition that the said parties of the second part their successors or assigns shall use no water at the said second lock as hereinbefore specified without giving the parties of *of* the first part the privilege of using at least twenty-five-horse power on the shore bank of the third lock as above mentioned. It is understood that a horse-power is equal 52 and eight-tenths cubic feet of water falling ten feet per minute or 33,000 pounds raised a foot high per minute.

In witness whereof the president of said company has hereto set his hand and the corporate seal of said company and the secretary of said company has countersigned the same, and the said trustees have hereto set their hands and seals as such trustees, and
479 the said West, Tibbits & Packard have hereto set their hands and seals the seventh day of June A. D. 1859.

EDWARD WEST. [L. S.]
JACKSON TIBBITS. [L. S.]
FREDERICK PACKARD. [L. S.]

[SEAL OF COMPANY.] JOHN F. SEYMOUR,
President Fox River Imp't Co'y, President.

ALEX. MITCHELL, [L. S.]
CHAS. BUTLER, [L. S.]
ALEX'D SPAULDING, *Trustees.* [L. S.]

Signed, sealed, and delivered in presence of—
DANIEL C. JENNE.
JAMES GILMORE.

Signed, sealed, and delivered by John F. Seymour & Abe B. Clark in presence of—
JOHN RICE.

Attest: AB'M B. CLARK, *Secretary.*

Signed, sealed, & delivered by Charles Butler & Alex Spaulding in presence of—
JOHN RICE.

Signed, sealed, and delivered by Alex. Mitchell, trustee, in presence of—
W. H. S. WRIGHT.
J. A. PIRIE.

STATE OF WISCONSIN, }
Outagamie County, } ss:

On this 11th day of June, A. D. 1860, before me personally came the above-named Edward West, Frederick Packard, & Jackson Tibbits and acknowledged the execution of the above agreement to be their free act and deed for the uses and purposes therein mentioned.

JAMES GILMORE,
Notary Public, Wis.

STATE OF NEW YORK, }
City and County of New York, } ss:

On this 26th day of October, A. D. 1860, before me personally appeared John F. Seymour, the president of the Fox & Wisconsin Improvement Company, to me known, and who, being duly sworn, did depose and say that he resided in Utica, New York; that he was the president of said company; that he knew the corporate seal of said company; that the seal affixed to the within conveyance was such corporate seal, and that it was so affixed by virtue of a resolution of the board of directors of said company, and that he signed his name thereto by virtue of said resolution as president.

Given under my hand and official seal the day and year first above written.

[SEAL OF COMMISSIONER.] JOHN RICE,
A Commissioner for the State of New York Appointed by the Governor of Wisconsin to Administer Oaths & Affirmations.

STATE OF WISCONSIN, }
City & County of Milwaukee, } ss:

480 Be it remembered that on the second day of April, A. D. 1861, before me personally came Alex. Mitchell, known to me to be one of the trustees of the Fox and Wisconsin Imp't Company & the person described & who executed the foregoing lease, and acknowledged before me that he executed the said foregoing lease as such trustee as aforesaid.

[NOTARIAL SEAL.] J. A. PIRIE,
Notary Public, Milw. Co.

Rec'd for record 1861, June 8th, at 12 m.
H. HILLS, *Register.*

481 *Certificate of Entry.*

REGISTER'S OFFICE, MENASHA, WIS., *April* 1, 1892.

I hereby certify that from the books and records of the United States land office in the city of Menasha, Wisconsin, it appears that Mr. Harry Eugene Eastman, on the seventh day of October, 1845, at Green Bay, Wis., entered, purchased, and paid for the fractional section north of river of section twenty-four, township twenty-one north, of range eighteen east, containing (18.88 acres) eighteen and $\frac{88}{100}$ acres, George W. Lawe, assignee.

ALBERT P. JACKSON, *Register.*

482 Whereas by virtue of an act of the legislature of the State of Wisconsin, approved July 6th, 1853, the Fox and Wisconsin Improvement Company became a body corporate and thereby and by subsequent acts of the legislature of said State became invested with the title to and right of selling and conveying a quantity of lands and water power in said State of Wisconsin.

And whereas on the fourth day of October in the year 1856, the governor of the State of Wisconsin did appoint Alexander Mitchell of the city and county of Milwaukee in the State of Wisconsin, and Charles Butler and Alexander Spaulding of the city and county of New York in the State of New York trustees by virtue of section eight of an act of the legislature of the State of Wisconsin approved October 3d, 1856.

And whereas, by an indenture of deed bearing date the first of December, 1856, the said Fox and Wisconsin Improvement Company, by Erastus Corning, their president, did under and pursuant to the last aforesaid act of the legislature of said State of Wisconsin, convey to the said Alexander Mitchell, Charles Butler and Alexander Spaulding, their successors, and assigns, all the lands water powers &c. aforesaid then unsold, (of which the hereinafter-described premises are part) in trust for the uses and purposes expressed in the act last aforesaid, and in said deed.

Now therefore, this indenture, made this third day of June in the year of our Lord one thousand eight hundred and sixty-one, between the said Fox and Wisconsin Improvement Company and Alexander Mitchell, Charles Butler and Alexander Spaulding, trustees as aforesaid, parties of the first part and Charles Cord & William T. Gray, Morgan L. Martin & E. S. Martin, parties of the second part,

Witnesseth, that the said parties of the first part for and in consideration of the sum of one dollar paid by the parties of the second part to the parties of the first part at or before the delivery of these presents and also of the rents, covenants, conditions and agreements hereinafter contained on the part of the parties of the second part, their heirs and assigns, to be paid, kept, observed and performed, by these presents do lease unto the said parties of the second part their heirs and assigns, all that certain piece or parcel of land situated in the town of Kaukauna in the county of Outagamie, State of Wisconsin, on the north side of Fox river, known and distinguished on a map as laid out by D. C. Jenne drawn by W. S. Nearing in the year eighteen hundred and fifty as lot number three (3) in block number one (1). The original of said map being in the land office of the said company and a tracing therefrom showing the lot and block aforesaid being attached hereto.

And the said parties of the first part also further hereby lease unto the parties of the second part their heirs and assigns, the right and privilege of taking and drawing from the canal of said company on which said lot abuts, a quantity of water equal to one hundred (100) horse power, each of which horse-power is equal to 52.8 cubic feet of water per minute under a head of ten feet; the said water to be

Exhibit 2*b*.

used for hydraulic purposes on the said lot hereby leased and not elsewhere.

And it is further understood and agreed that the aforesaid quantity of water may be applied to any machinery or mills except a saw-mill, subject to all the restrictions attending the use of the same contained in this indenture, to use and enjoy the premises, water privileges, appurtenances hereinbefore leased to the said party of the second part their heirs and assigns from the day of the date of these presents for sixty (60) years subject to the conditions, provisions, restrictions, and agreements herein contained, yielding and paying therefor (unto the said parties of the first part, their lawful agents successors and assigns) during the continuance of this lease, the yearly rent of one dollar payable quarterly in advance, on the first days of February, May, August and November in each and every year.

And the said parties of the second part for themselves
483 their heirs and assigns hereby covenant and agree with the said parties of the first part, their successors and assigns to pay them or their lawful agents successors and assigns the rents above reserved in manner and at the time aforesaid, and also to pay all taxes, charges and assessments, ordinary and extraordinary, which shall be taxed, charged imposed or assessed on the hereby demised premises and privileges or any part thereof, or on the said parties of the first part, their successors and assigns in respect thereof in case the said rent or sums of money, or any part thereof shall at any time be due or unpaid for the space of ten days after the payment becomes due as aforesaid, then the said parties of the first part their successors and assigns shall have the right, either in person or by their agent, attorney or bailiff, and the parties of the second part hereby authorize and empower them to enter in and upon the hereby demised premises and privileges or any part thereof, and *their* to distrain for the same and the distress so taken to take, lead, carry or drive away and sell the same at public auction or vendue giving thirty days' notice of such sale by advertisement posted up in two or more public places in said county or by publication in a newspaper printed therein to satisfy the rent in arrear, due or owing and the cost of the distress and sale as aforesaid hereby expressly waiving all advantage or benefit of any exemption, stay appraisement or other laws invalidating or in any manner interfering with the power and authority hereby conferred by the said parties of the second part, and it is covenanted and agreed that all and singular the property which shall be at any time on the demised premises the property of the said parties of the second part their heirs or assigns shall be liable and subject to levy and distress for rent in arrear and unpaid and in case no sufficient distress can be found on said premises to satisfy the rent in arrear and costs as aforesaid, or in case all or any of the covenants, agreements, conditions and provisions in this lease contained on the part of the parties of the second part their heirs and assigns shall not be kept performed and observed, then and in such case the said parties of the first part, their successors or assigns shall have the right to re-enter

on the hereby demised premises, rights and privileges, and take possession and control of the same, and the same to have, hold and enjoy again as in his or their former estate and to declare this lease void anything herein contained to the contrary thereof notwithstanding:

Provided, however, that the said parties of the first part, their successors and assigns shall not have the right to re-enter and take possession as aforesaid until thirty days' notice of their intention so to do shall have been given, which notice shall be served on the person in possession of the hereby demised premises or by putting the same up in some conspicuous place on said premises.

And it is further agreed between the parties hereto that the water, the right and privilege of using which is hereby demised and granted, shall be drawn from the aforesaid canal in flumes or bulkhead- to be placed and constructed by the said parties of the second part, their heirs and assigns, at their expense and cost in or through the canal bank in such manner as the said parties of the first part, their successors and assigns, or their chief engineer, superintendent, attorney, or agent, shall prescribe and direct, and such flumes or bulkheads, and all other structures or erections created therewith shall be made constructed and forever maintained in a substantial manner so as not to waste the water flowing in said canal or permit it to be wasted, and in such manner as not to impair injure or weaken the aforesaid canal bank, and the said parties of the second part, their heirs and assigns, shall and will keep said flumes and bulkheads tight, and shall and will not waste the water flowing in said canal or permit it to be wasted, or to flow or pass through the said bulkhead- or flumes or other structures, unless wanted for some hydraulic purpose, consistent with the intention and provisions of this lease.

484 And the said parties of the first part their successors and assigns shall have the right to stop and draw off the water in said canal for the purpose of making any repairs or any alterations in the said flumes or bulkheads or canal which they may think proper or for any purpose connected with the navigation or use of the Fox river or the canals, locks and dams connected therewith or the improvement of the water powers and other property of the said Fox and Wisconsin Improvement Company, and the said parties of the second part shall have no claim for damages in consequence of said water being drawn off for the purposes above specified, but in case they are deprived of the use of the water for more than three days at any one time, the excess of time shall be deducted *pro rata* quarterly from the stipulated amount to be paid annually in this lease.

And if the said parties of the first part, their successors and assigns shall have reason to suspect that the said parties of the second part, their heirs or assigns do not apply or use the water economically, or do take or use more water than by this indenture is demised or do waste, the water flowing in said canal or permit it or any portion to waste, then the said parties of the first part their successors and assigns shall have the right to enter on the aforesaid

premises and to stop the water and wheels and machinery of the said parties of the second part their heirs or assigns until an examination of the flumes, acqueducts and water wheels and machinery of the said parties of the second part, their heirs and assigns can be made by the engineer, superintendent or agent of said parties of the first part, their successors and assigns, to ascertain whether or not the water aforesaid is wasted or permitted to waste and when the quantity used or taken is greater than the quantity provided for in this lease and leased to the said parties of the second part, their heirs and assigns.

And it is further agreed between the parties hereto, that the said parties of the first part their successors and assigns shall not in anywise be answerable for any damages or loss that shall in any manner arise to the said parties of the second part their heirs or assigns in consequence of or by reason of any breach in the said canal wall, dam, or other works therewith connected. But the parties of the first part, their successors and assigns, shall repair any breach or injury to the said works that shall arise from any freshet or from natural wear and decay within a reasonable time after it shall occur, and the said parties of the second part, their heirs or assigns shall not be liable for the rent during the time they shall not use the water for hydraulic purposes in consequence of such breach or of its repair.

And it is further covenanted and agreed that the parties of the first part their successors and assigns shall at any time or times hereafter be at liberty to enlarge the said canal for any purpose whatever. In case said canal is enlarged and in consequence thereof it shall become necessary to raise the h-ight of the flumes or bulkheads used by the said parties of the second part, their heirs or assigns, then the said last-mentioned parties shall raise the same at their own cost and expense, without any claim for damages on the parties of the first part, their successors and assigns.

And it is further covenanted and agreed by the parties of the second part their heirs or assigns that a right of way shall always be kept open and unobstructed not less than 16 feet wide on the said canal bank, and that all persons or teams desiring to pass upon, down or along said canal bank shall have free and unobstructed passage on and upon said canal bank, and that they will build and maintain a permanent bridge over their flume or bulkhead in order to carry out the foregoing provisions of this agreement.

And it is further agreed that no structure or erection shall be made upon the property hereby leased or in connection therewith which in the opinion of the said Fox and Wisconsin Improvement Company or their engineer, superintendent or agent, shall endanger the security of their works or property or interfere with the use of the same.

It is further agreed that if in the opinion of said Fox and Wisconsin Improvement Company, their engineer, superintendent, or agent it is necessary for the security of their works, to alter, strengthen or repair any of the structures or erections of the said parties of the second part, they shall have the right to enter upon the premises hereby leased and to make such alterations and repairs

at the cost of the parties of the second part their heirs or assigns, unless the said parties of the second part their heirs or assigns shall make the same at the time and in the manner directed by said company, its engineer, superintendent, or agent, and it is hereby agreed that the amount so expended by said company shall be paid within thirty days and the payments secured in the same manner herein provided for the security of the payment of rent.

And the parties of the second part further agree in consideration of the covenants and agreements hereinbefore contained that they will within one year from this date, put up complete in running order and thereafter maintain on the hereby-demised premises a good frame flour mill with a stone foundation, at least two run of stones, three and a half stories high and thirty-five (35) by forty-five (45) feet or equal to that in size.

And the parties of the first part, in consideration of one dollar to them paid do hereby covenant that they or their successors or assigns will at the expiration of the said hereby-granted term, if required by the said parties of the second part or their assigns, renew this lease for the term of twenty-five (25) years thereafter next ensuing.

Provided, that the rent to be paid for said new term by the parties receiving such renewal in manner & form as herein provided, shall be at and after the rates of rent that shall then be customarily paid by other parties renting water power of said parties of the first part, their successors or assigns, at Grand Kaukauna—or if no other there, then the same as for similar privileges rented by said parties of the first part at other points on the Lower Fox river, such rates — be ascertained by reference to such leases as shall have been made within not more than five years before the date of such renewal.

In witness whereof the said parties have set their hands and seals the day and year first above written.

M. L. MARTIN. [L. S.]
E. S. MARTIN. [L. S.]
JOHN F. SEYMOUR, [L. S.]
President of the Fox & Wisconsin Improvement Company.
[Seal of Company.]

CHARLES BUTLER, [L. S.]
ALEXANDER SPAULDING, [L. S.]
Trustees.

486 CHARLES CORD, [L. S.]
WILLIAM T. GRAY, [L. S.]
Parties of Second Part.

Signed, sealed, and delivered in presence of—
WM. J. GREEN.

For president:
HENRY GREEN.
J. THOMAS SPUGG.

For Charles Butler and Alexander Spaulding, trustees:
CHARLES T. POLHANNES.
JOHN RICE.

STATE OF WISCONSIN, }
County of Brown, } ss:

Be it remembered on the 17th day of June, A. D. 1861, personally came before me the above-named M. L. Martin, to me known to be the persons who executed the foregoing instrument, and acknowledged the same to be *their* free act and deed for the uses and purposes therein mentioned.

WM. J. GREEN,
Court Com., Brown Co., Wis.

STATE OF NEW YORK, }
City and County of New York, } ss:

Be it remembered that on this twenty-fourth day of August, 1861, before me personally came the aforesaid trustees, known to me to be the trustees of the Fox and Wisconsin Improvement Company and to be the persons described in and who executed the foregoing instrument, and each severally acknowledged before me that they executed the said foregoing lease as such trustees as aforesaid.

Witness my hand and official seal the day and year above written.

JOHN RICE, [L. S.]
Comm'r Appointed by the Governor of Wisconsin for the State of New York.

STATE OF NEW YORK, }
Oneida County, } ss:

On this 30th day of August, 1861, before me personally came John F. Seymour, the president of the Fox and Wisconsin Improvement Company, to me known, who, being by me duly sworn, did depose and say that he resided at Utica, in said county; that he was the president of said company; that he knew the corporate seal of said company; that the seal affixed to the within lease was such corporate seal, and that it was so affixed by virtue of a resolution of the board of directors of said company, and that he signed his name thereto by virtue of said resolution as president of the said company.

Witness my hand and official seal, at Utica, the day and year above written.

[COMMISSIONER'S SEAL.] DEXTER GILLMORE,
Com'r Duly Appointed by the Governor of Wisconsin for the State of New York.

STATE OF WISCONSIN, }
Outagamie County, } ss:

On this twenty-fifth day of September, 1861, before me personally came Wm. T. Gray & Charles Cord, to me known as the
487 parties of the second part, and each severally acknowledged before me that they executed the foregoing lease for the purposes therein mentioned.

FREDERICK PACKARD,
Notary Public, Wisconsin.

Received for record, 1861, October 12th, at 12 o'clock m.
H. HILLS, *Register.*

APPLETON, WIS., *Oct.* 5, '92.

In accordance with an order of this court appointing me referee to take the testimony in the above-entitled action, I took the testimony produced upon trial and herewith file the same as my report.
F. S. BRADFORD, *Referee.*

Endorsement: In circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, pl'ffs, *vs.* Kaukauna Water Power Co., Green Bay & Mississippi Canal Company, *et al.*, defendants, and Green Bay & Miss. Canal Co.'s cross-bill. Cir. court, Outagamie Co. Filed Oct. 4, 1892. H. J. Mulholland, clerk. Testimony taken on issue of fact formed by answers to cross-bill or complaint, at Kaukauna, before Referee F. S. Bradford.

488 Copy.

In Circuit Court, Outagamie County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, GREEN BAY & MISSISSIPPI CANAL COMPANY, *et al.*, Defendants.

In the cross-suit of the Green Bay and Mississippi Canal Company.

The deposition of George W. Lawe, taken by and on behalf of The Kaukauna Water Power Co. *et al.*, defendants in the cross-complaint in the above-entitled action, now pending in the circuit court of Outagamie county, pursuant to the notice hereto annexed, taken by and before David J. Brothers, a notary public for said county, at the residence of said George W. Lawe, on the 25th day of March, 1892.

Present: David S. Ordway, att'y for Kaukauna Water Power Co. *et al.*, and Moses Hooper, for Patten Paper Company, Limited, *et al.*, and Breese J. Stevens and Ephraim Mariner, att'ys for the Green Bay & Miss. Canal Co.

GEORGE W. LAWE, being first duly sworn, says: I was acquainted with Morgan L. Martin at the time the Government dam and canal were first constructed at Kaukauna and before then.

At the time of and before the building of such canal and dam I was the owner of the south half of private claim No. one, at Kaukauna, and of the fractional part of section 24, bordering said canal and above the dam.

489 In December, 1851, I conveyed to Morgan L. Martin certain parts of the above property by deed bearing date December 12th, 1851, and recorded in the office of the register of deeds of Outagamie county, in vol. 3 of Deeds, page 212; a copy of which deed is to this deposition annexed and is part hereof.

Before the delivery of said deed there was an arrangement or agreement made in writing between Morgan L. Martin and me—that is to say:

1. Contract to convey.
2. Bond from Martin to me.

True copies of which contract and bond are hereto annexed and made part of this deposition.

In 1855 Matthew J. Meade and myself executed deeds to the Fox & Wisconsin Improvement Company of certain parts of fractional section No. twenty-four and of the south or upstream half of private claim No. one at Kaukauna; true copies of both of which deeds are to this deposition annexed and made part thereof.

Question by Mr. ORDWAY: What did Morgan L. Martin claim to you at or before Dec., 1851, as to the ownership of the water power which was to be created on the canal where the bulkheads mentioned in his bond to you were to be put in?

Objected to by Mr. Mariner upon every ground which he may wish to specify, and Mr. Ordway agrees that any and all objections, except as to form of question, may be made in any and all places and at any and all times when said deposition may be offered and by any attorney representing any party herein.

Ans. He claimed that the owner of the land would own the water power, and that if I would give him a deed of half the land he would improve the power, as mentioned in the contract and bond, and we would own the water power half and half, and he
490 would indemnify me against the claim of the State, as mentioned in the bond.

X Cross-examined by Mr. MARINER:

At the time of this talk with Mr. Martin he was a contractor with the State for the construction of this improvement.

The contract with Mr. Martin to convey (copy annexed) by me to him was before the date of deed and bond.

Witness shown paper and is asked is this the original contract.

Ans. I think it is not. I think it is a copy. It is in Governor Doty's handwriting. I asked him to prepare the contract.

Q. The signature to this contract is partly obliterated by pencil mark. Can you tell whether the signature is in your handwriting?

Ans. It is. Mr. Desnoyer's signature, the witness, is also in his handwriting, and it is probable that this is the original contract and that I was mistaken in saying it was a copy. A closer inspection shows this.

Mr. Mariner reads the contract aloud to witness preliminary to question.

Q. When you came to make the deed to Mr. Martin you required that he should execute the bond to you, which has been offered in evidence, to indemn-y you against the claim of the State to the water power. How did you happen to do that?

A. I don't remember exactly.

Q. Did you have the advice of counsel as to the sale and contract and bond?

A. Yes; Gov. Doty. I resided while this was being done here on the premises, near the river. I had then resided here since about 1839, and have resided here ever since. I was living here while the dam was being constructed.

491 Q. When the dam was first constructed how was the bank of the river, steep and abrupt or gradually sloping, on north side?

Ans. Pretty steep; lay at an angle of about 30 degrees, I think, and was covered with trees.

Q. Was the dam constructed clear across the river to the north bank or did it stop short of the bank a distance sufficient to make the opening for the canal between the end of the dam and the bank, substantially as shown by the diagram I have made on this next sheet?

Ans. Diagram is substantially correct. The outer wall of the canal was out in the river, on the rock bottom of the river, and the bottom of the canal was on the rock bottom of the river as far down—as far as near to the present city bridge across the river.

(Here follows diagram marked page 492.)

493 They took rock out of the river to make the river bank of the canal and then banked it with clay on inside.

As to the manner of building of the dam above, Mr. Mariner made the witness his own.

Cross-examined by Mr. ORDWAY on that subject:

Question. Who did the work of putting in the dam and canal originally?

A. Henry Hewitt, Sr., finished it; one John Allen commenced it; Henry Hammen, of Little Chute; Owen Hart, of Kaukauna; Michael Maloney, of Kaukauna, among others, worked on the canal—probably worked for Hewitt & Allen both. I do not think that the river bank projected out into the river, making a point at or over against the north end of original dam.

The water was not over five feet in depth in canal at the guard-lock; guard-lock about 36 feet wide in the clear when both gates open; that is my recollection; I stepped it over once and counted it.

By Mr. MARINER:

I was familiar with the channel of the river at that time—engaged in navigating river and canal. The timber was cut off from the north bank of the river north of the canal; I think they began to cut it in 1850. After they removed the timber the bank began to slide towards the canal, and the Government would dredge it out

FOLDOUT(S) IS/ARE TOO LARGE TO BE FILMED

until they have dredged the full twenty feet which they had there on north side of canal under my deed.

Q. How much higher has the present dam raised the water in the river than it was raised by the old dam, if any, at ordinary stage of water?

A. I think from 2½ feet to three (3) feet. I had known the old boats which did not draw over three feet of water to scrape the bottom right below the swing-bridge across the canal; that was then the shallowest place in the canal.

494 By Mr. MARINER:

When this dam was being built—first dam and canal—was you here all or most of the time and do you remember where the dam ended and where the canal was placed on the north side of river and where the stone wall on river side of canal was placed?

A. I was and do remember; the wall was placed out in the river about one hundred feet from the north bank of river.

By Mr. B. J. STEVENS:

Q. What was the lay of the land at the upper left-lock near Division street with reference to being high or low?

Ans. About on a level with the land where Smith's flouring mill was built above the bridge. The lock was built right into the foot of the hill near Division street. Land rises very fast just on north of lock, but falls off gradually southerly of lock to river. The canal lay right into the foot of the sharp pitch of the hill most all the way from the Smith mill to the upper left-lock. For this distance the north bank of the canal was mostly the natural land; the southerly bank was all embankment, or nearly so, being a very heavy embankment down at the lock, but running out up at the Smith mill. The canal lies in river from dam down to about the Smith mill, and from there downstream it enters the land and lies on the land thence down to slackwater below.

Read to and signed now by Mr. Lawe.

(Signed) GEO. W. LAWE.

495 Memorandum of agreement made the 18th day of June, 1851, by and between George W. Lawe, of Kaukauna, in the State of Wisconsin, and Morgan L. Martin, of Green Bay, in said State.

1st. The said George W. Lawe, in consideration of the covenants and agreements hereinafter mentioned, to be performed on the part of said Martin, covenants and agrees to convey by good and sufficient deed of conveyance to said Martin, the one undivided half of the water power and land situated on the easterly side of the canal where the same runs across the lands owned and occupied by said Lawe, at Kaukauna on the Fox river, said land constituting a part of section 24, town. 31, range 18, and a part of private claim No. 1,

at said place, excepting and reserving however, to said Lawe, his buildings and improvements and the saw-mill connected therewith.

2nd. And the said Martin, on his part, agrees, in consideration of said conveyance, that he will construct said canal across the lands of said Lawe, of suitable dimensions, not less than one hundred feet at the surface line in width, and of suitable depth to use all surplus water for hydraulic purposes, and put the ground or protection wall in the Fox river, from the dam downstream so as to make the body of water therein, of like dimensions, and to be used for like purposes.

Also, he further agrees, in consideration of said conveyance free of all costs and charges to said Lawe, to put in said protection wall and embankment, a sufficient number of bulkheads to enable the parties to make use of all the surplus water in said canal for hydraulic purposes.

This agreement to be binding upon the parties, their heirs and assigns.

496 In witness whereof, they have hereunto interchangeably set their hands and seals the day and year above mentioned.

GEO. W. LAWE.

In presence of—
F. DESNOYERS.

497 Morgan L. Martin to Geo. W. Lawe.

Known all men by these presents that I, Morgan L. Martin of Green Bay county of Brown and State of Wisconsin, am held and firmly bound unto Geo. W. Lawe of Kaukauna in said county and State in the sum of ten thousand dollars to be paid to the said Geo. W. Lawe his executors administrators or assigns to which payment well and truly to be made, I bind myself my heirs executors and administrators firmly by these presents.

Signed and sealed this twelfth day of December, A. D. 1851.

The condition of this bond is such that if the said Morgan L. Martin his heirs executors or administrators, do construct and finish a canal across the land of said Lawe at Kaukauna aforesaid according to his contract with the State, of suitable dimensions, to use the surplus water not required for navigation, for hydraulic purposes, said canal not to be less than one hundred feet in width, and secured according to the plan adopted by the State engineer, and further, if the said Martin shall construct in the lower embankment of said canal a sufficient number of bulkheads to make use of the said surplus water for hydraulic purposes, and shall indemnify and save harmless the said Lawe against any claim which the State of Wisconsin may set up in consequence of the use of said surplus water for hydraulic purposes by said Lawe or any one claiming or to claim under him then the above bond to be void otherwise of force.

MORGAN L. MARTIN. [SEAL.]

In presence of—
DAVID P. MEADE.
THEODORE CONKEY.

498 STATE OF WISCONSIN, }
Outagamie County. }

On the 12th day of December, A. D. 1851 — before me the within-named Morgan L. Martin and acknowledged that the within bond was his free act and deed for the uses and purposes therein expressed.

DAVID P. MEADE,
Justice of the Peace.

Rec'd for record Dec. 19th, 1851, at 3 o'clock p. m.
HENRY S. EGGLESTON,
Register of Deeds.

499 George W. Lawe to Morgan L. Martin. } War. Deed.

This indenture made the twelfth day of December, in the year of our Lord one thousand eight hundred and fifty-one, between George W. Lawe and Catherine A. Lawe, parties of the first part, and Morgan L. Martin, party of the second part,

Witnesseth: that the said parties of the first part in consideration of the sum of one dollar to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained, sold, remised, released, aliened and confirmed, and by these presents doth grant, bargain, sell, remise, release, alien and confirm unto the said party of the second part, and to his heirs and assigns forever:

The undivided half of the following-described piece or parcel of land, being that part of private claim number one (1) lying on the easterly side of the canal now owned and occupied by the said George W. Lawe and Catherine A. Lawe; excepting and reserving to the said parties of the first part all building- and improvements. the saw-mill and the improvements connected therewith.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining; and the reversion and reversions; remainders, rents, issues and profits thereof, and all the right, titles, interest, claim or demand whatsoever of the said parties of the first part, either in law or equity, of, in, and to, the above-bargained premises with their hereditaments and appurtenances:

500 To have and to hold the said premises as above described with the hereditaments and appurtenances unto the said party of the second part, and to his heir- and assigns forever.

And the said George W. Lawe and Catherine A. Law- for themselves and their heirs, executors or administrators, doth covenant, grant, bargain and agree to and with the said party of the second part, and to his heirs and assigns, that at the time of the ensealing and delivering of these presents they were well seized of the premises above conveyed as of a good, sure, perfect, absolute, and indefeasible estate of inheritance in the law, fee-simple, and have good

right, full power, and lawful authority to grant, bargain, sell and convey the same in manner and form aforesaid, and that the same are free and clear of all incumbrances of what kind and nature soever, and that the above-bargained premises in the quiet and peaceable possession of the said party of the second part, his heirs and assigns against all and every person or persons lawfully claiming or to claim the whole or any part thereof will forever warrant and defend.

In witness whereof the said parties of the first part have hereunto set their hands and seals the day and year first above written.

GEO. W. LAWE. [SEAL.]
CATH. A. LAWE. [SEAL.]

Signed, sealed, and delivered in presence of—
J. S. BUCK.
DAVID P. MEADE.

501 STATE OF WISCONSIN, } ss:
County of Outagamie, }

Be it known that on the twelfth day of December, A. D. 1851, before me, David P. Meade, justice of the peace in and for said county, personally came the above-named George W. Lawe and Catherine A. Lawe and acknowledged the above indenture to be their free act and deed for the uses and purposes therein expressed, and desired that the same might be recorded as such according to law. The said Catherine A. Law-, being by me duly examined separate and apart from her said husband, declared that she did voluntarily and of her own free will and accord seal and as her act and deed deliver the said indenture without any coercion or compulsion on the part of her said husband.

In testimony whereof I have hereunto set my hand the day and year above written.

DAVID P. MEADE,
Justice of Peace.

Rec'd for record Sept. 11, 1852, 10 a. m.
JULIUS S. BUCK, *Reg'r*,
P'r ALDEN S. SANBORN, *Dep'y.*

502 Matthew J. Meade to Fox & Wis. Imp't Co. } Deed.

This indenture made the 14th day of August in the year of our Lord one thousand eight hundred and fifty-five between Matthew J. Meade of Green Bay in the county of Brown and State of Wisconsin, party of the first part, and the president and directors of the Fox and Wisconsin Improvement Company a corporation, created by law, parties of the second part,

Witnesseth that the said party of the first part in consideration of the sum of twenty-five hundred dollars to him in hand paid by the said parties of the second part the receipt whereof is hereby acknowl-

edged, hath granted, bargained, sold, remised, released, aliened and confirmed, and by these presents doth grant, bargain, sell, remise, alien and confirm unto said parties of the second part, and to their successors and assigns forever all that certain tract or parcel of land, situate lying and being at Kaukauna in the county of Outagamie and State aforesaid and described as follows to wit: Commencing at a point at the upper or western extremity of the canal at Kaukauna aforesaid, and twenty feet north of the northerly water line of the canal running thence down and along the bank of said canal and twenty feet distant from the water line as aforesaid to the northerly line of the south half of private claim numbered one lately owned by George W. Lawe, thence following said northerly line of the south half of lot one aforesaid, easterly to Fox river at low-water mark, thence upstream along the margin of the Fox river to the upper extremity of the guard-lock at the head of the canal, thence northerly to the place of beginning. It being the intent of
503 the — first part to convey to the said party of the second part the towing path on the north side of the canal, (not including any buildings or other improvements now erected thereon) and all the land owned by the party of the first part lying between the said towing path and the Fox river, together with all hydraulic privileges secured to George W. Lawe by a certain bond executed to him and his assigns by M. L. Martin, which bond is by this deed cancelled, and this conveyance being also subject to one heretofore executed to said Martin by said Law- of a portion of the premises.

Together with all and singular hereditaments and appurtenances thereunto belonging or in anywise appertaining and reversion and reversions, rents, issues and profits thereof, and all the estate, right, title, interest, claim or demand whatsoever of the said party of the first part, either in law or equity of in and to the above-bargained premises with the hereditaments and appurtenances, to have and to hold the said premises as above described with the hereditaments and appurtenances unto the said parties of the second part and their successors and assigns forever, and the said Matthew J. Meade, for himself his heirs executors or administrators doth covenant grant bargain and agree to and with the said parties of the second part and to their successors and assigns that the above-bargained premises in the quiet and peaceable possession of the said parties of the second part their successors and assigns, against all and every person or person- lawfully claiming or to claim the whole or any part thereof will forever warrant and defend.

In witness whereof the said parties of the first part hath hereunto set his hand and seal the day and year first above written.

504 MATTHEW J. MEADE. [SEAL.]

Signed, sealed, and delivered in presence of—the word "heirs" erased and successors inserted on the 11th, 36th, 38th, & 39th lines before execution.—

E. H. ELLIS.
CHAS. TULLER.

STATE OF WISCONSIN, } ss:
County of Brown, }

Be it known that on the seventeenth day of August, A. D. 18—, before me, a notary public in and for said county, personally came the above-named Matthew J. Meade and acknowledged the above indenture to be his free act and deed for the uses and purposes therein expressed, and desired that the same might be recorded as such according to law.

In testimony whereof I have hereunto set my hand the day and year above written.

E. H. ELLIS,
Notary Public.

Rec'd for record, 1855, August 25, 9 o'c. a. m.
JULIUS S. BUCK, *Register,*
By T. P. BINGHAM.

505 Geo. W. Lawe to Fox & Wis. Imp't Co. } Quitclaim Deed.

This indenture made the twenty-eighth day of August in the year of our Lord one thousand eight hundred and fifty-five, between George W. Lawe and Catherine his wife of Green Bay, Brown Co. Wisconsin, parties of the first part, and the president, directors and company of the Fox and Wisconsin Improvement Company, parties of the second part, witnesseth, that the said parties of the first part for and in consideration of the sum of one dollar to them in hand paid by the said parties of the second part, the receipt whereof is hereby confessed and acknowledged, have granted, bargained, sold, remised, released, and quitclaimed, and by these presents do grant, bargain, sell, remise, release, and quitclaim unto the said parties of the second part their successors and assigns all the estate, right, title, claim, and demand of the parties of the first part either at law or in equity, and as well in possession as in expectancy of in and to all that certain tract or parcel of land situate at Kaukaulin, Outagamie county, and described as follows, to wit: Commencing at a point on the upper or western extremity of the canal and twenty feet north of the north water line of said canal running thence downstream along the bank of said canal and twenty feet from the water line as aforesaid to the north line of the south half of private claim number one (1) lately owned by Geo. W. Lawe, thence along said north line to the margin of the Fox river, thence upstream along the margin of said river at low-water mark to the upper extremity of the guard-lock at the head of the canal thence to the point of beginning, it being the intent of the parties
506 of the first part to convey to the said parties of the second part, the tow-path on the north-ly side of the canal not including any building which may be erected thereon, and all the land owned by the party of the first part between the said tow-path and Fox river, subject however to the conveyance of a portion of

said lands heretofore executed by George W. Lawe & wife to Morgan L. Martin.

Together with all and singular the hereditaments thereunto belonging or in anywise appertaining, to have and to hold the said premises as above described with the hereditaments and appurtenances unto the said parties of the second part & to their successors and assigns forever.

In witness whereof the said parties of the first part have hereunto set their hands and seals the day and year first above written.

GEO. W. LAWE. [SEAL.]
CATH. A. LAWE. [SEAL.]

Signed, sealed, and delivered in presence of—the words "heirs" struck out twice and successors interlined in lieu thereof before signing—

JOHN LAST.
JOHN D. LAW.

STATE OF WISCONSIN, } ss:
Brown County, }

Be it remembered that on the twenty-eighth day of August, A. D. 1855, personally came before me the above-named George W. Lawe and Catherine, his wife, to me known to be the person- who executed the said deed, and acknowledged the same to be their free act and deed for the uses and purposes therein mentioned.

507

JOHN LAST,
Notary Public, Bro. Co., Wis.

Rec'd for record 1855, Sept. 3d, 4 o'cl'k p. m.

J. S. BUCK, *Register,*
P'r T. P. BINGHAM, *Deputy.*

508 STATE OF WISCONSIN, } ss:
Outagamie County, }

I, David J. Brothers, a notary public in and for said county, do hereby certify that the above and foregoing deposition was taken before me at the residence of the witness therein named, George W. Lawe, in the city of Kaukauna, on the 25th day of March, A. D. 1892, at the time mentioned in said notice; that it was taken at the request of the defendant The Kaukauna Water Power Company upon verbal interrogatories; that it was reduced to writing by David S. Ordway in my presence and under my direction, with the consent of all the other attorneys for the other parties, upon whom said notice was served—that is to say, E. Mariner, B. J. Stevens, and Moses Hooper; that it was taken to be used in the action and upon the issue formed as stated in said notice, which action and cross-suit therein named in said notice are now pending in the circuit court for said county of Outagamie, and that the reason for taking it was that the said witness, George W. Lawe, was so sick and aged as to make it probable that he would not be able to attend at the trial of said issue; that David S. Ordway appeared for The Kaukauna Water

Power Company and the other defendants who have answered the said cross-complaint by Alfred L. Cary and him, the said David S. Ordway, as attorneys; that Breese J. Stevens and Ephraim Mariner appeared on behalf of the Green Bay & Mississippi Canal Company, and that Moses Hooper appeared on behalf of the plaintiffs, The Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp and Paper Company, at the taking of such deposition, and that a notice, of which the annexed is a copy, was served personally upon the said attorneys on the 18th day of March,
509 A. D. 1892; that said deponent before examination was sworn to testify the truth, the whole truth, and nothing but the truth relative to said cause, and that said deposition was carefully read to said deponent and then subscribed by him.

(Signed) DAVID J. BROTHERS,
Notary Public in and for Outagamie County and State of Wisconsin. [SEAL.]

My fees are:

Adminstrg. oath to witness	$ 06
For 44 fol. deposition, .12 fol.	5 28
For one mile travel	06
	$5 40
Geo. W. Lawe, witness fee, for a day's attendc.	1 50
	$6 90

The above amount paid me March 31, 1892, by David S. Ordway, att'y for Kaukauna Water Power Company.

(Signed) DAVID J. BROTHERS,
Notary Public.

510 In Circuit Court, Outagamie County, State of Wisconsin.

PATTEN PAPER COMPANY, LIMITED; UNION Pulp Company, and Fox River Pulp and Paper Company, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, Green Bay & Mississippi Canal Company, *et al.*, Defendants.

In the Cross-suit of the Green Bay and Mississippi Canal Company.

SIRS: You will please take notice that the deposition of George W. Lawe, a witness who resides in the city of Kaukauna, in said county of Outagamie, and who is so sick and aged as to make it probable that he will not be able to attend at the trial of said issue, will be taken on the part of the above-named defendants, Kaukauna Water Power Company and others, who have answered the cross-complaint of said Green Bay & Mississippi Canal Company, by Alfred L. Cary and David S. Ordway, attorneys, to be used upon the issue made upon said cross-complaint and answer, said deposition to be taken by and before D. J. Brothers, a notary public, at

the residence of said George W. Lawe, in the city of Kaukauna, in said county of Outagamie, on the 25th day of March, A. D. 1892, at one o'clock p. m., at which time and place you will appear before said notary public and put such interrogatories as you think fit.

Dated March 18, 1892.

(Signed) ALFRED L. CARY AND
DAVID S. ORDWAY,
Attorneys for said Kaukauna Water Power Company et al.

To B. J. Stevens & E. Mariner, att'ys for Green Bay & Miss. Canal Co., and Hooper & Hooper, att'ys for said pl'ffs.

511 Endorsement: In circuit court, Outagamie county. In cross-suit of Green Bay & Miss. Canal Company *vs.* Kaukauna Water Power Company, Patten Paper Company, Limited, *et al.* Notice of taking deposition of George W. Lawe. Within notice served personally on us March 18, 1892, at eleven o'clock a. m. (Signed) E. Mariner, B. J. Stevens, att'ys G. B. & Miss. Canal Co. (Signed) Moses Hooper, Hooper & Hooper, att'ys for Patten Paper Company. In circuit court, Outagamie county. Patten Paper Company, Limited, *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company, Green Bay and Mississippi Canal Co., *et al.*, defendants. Deposition of George W. Lawe in cross-suit. Cir. court, Outagamie Co. Filed Apr. 2, 1892. H. J. Mulholland, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

512 Superior Court, Milwaukee County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Pl'ffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Henry Hewitt, Jr., Chicago & Northwestern Railway Company, Reese Pulp Company, *et al.*, Def'ts,

and

THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Pl'ff in Cross-complaint,
vs.
PATTEN PAPER COMPANY, LIMITED; KAUKAUNA WATER POWER Company, Green Bay & Mississippi Canal Company, *et al.*, Def'ts in Cross-complaint.

Pursuant to a notice hereto annexed entitled "Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs, against The Kaukauna Water Power Company, Green Bay & Mississippi Canal Company, *et al.*,
513 defendants," and also a cross-suit therein entitled "Green Bay & Mississippi Canal Company, pl'ff in cross-suit, *vs.* Patten Paper Company, Limited; Kaukauna Water Power Company, Green Bay & Mississippi Canal Company, *et al.*, def'ts, in

cross-suit," and also the proof of service thereupon endorsed and admitted by Winkler, Flanders, Smith, Bottum and Vilas, on behalf of the Chicago & Northwestern Railway Company; E. Mariner and B. J. Stevens, on the part of the Green Bay & Mississippi Canal Company; Hooper & Hooper, on the part of the plaintiffs in the main suit; P. R. Barnes, on behalf of the Kelso Pulp Company and any other defendant represented by him in the pleadings, and also David S. Ordway, attorney for Henry Hewitt, Jr., and William P. Hewitt in the cross-suit; on which acceptance of service it appears that said notice was personally served on all the parties above named on the 26th day of January, 1893; and now, to wit, on the 6th day of February, 1893, at 11 o'clock a. m., the time mentioned in said notice, there having appeared before me Alfred L. Cary and David S. Ordway, on behalf of The Kaukauna Water Power Company *et al.*, defendant- in above suits; Ephraim Mariner, on behalf of the Green Bay & Mississippi Canal Company; Moses Hooper and George C. Green, on behalf of the parties by them represented as above stated, and David S. Ordway, on behalf of said Henry Hewitt, Jr., and William P. Hewitt; and there also having appeared at the same time and place now here before me the said witnesses, Nathaniel M. Edwards and Edward Ruger, mentioned in said notice, the said—

NATHANIEL M. EDWARDS was first called as a witness for and on behalf of the said Kaukauna Water Power Company, his testimony to be used in both the main and cross suit, who, being duly
514 sworn, deposed and stated as follows:

Examined by Mr. ORDWAY:

Q. 1. Where do you live?

A. Appleton, Wisconsin.

Q. 2. What is your business?

A. Civil engineer.

Q. 3. Have you been examined before in this same suit?

A. I have.

Q. 4. You made, did you not, Exhibits "No. 1," put in evidence on the part of the defendant on the occasion of taking your deposition at Kaukauna a year or two since, and also exhibit marked "Plaintiff Patten Paper Company, Limited, *et al.* Ex. A," put in evidence in this main suit at Appleton some time in March, 1890?

A. I did, I believe, at those times.

Q. 5. Since that time and during the year 1892, have you, at the request of myself, Mr. Ordway, made measurements and surveys of a Government canal at Kaukauna from the point above Government dam down to the first lift-lock in that canal?

A. I have.

Q. 6. Now, I show you a map and tracing, which is entitled thereupon "Map showing the first level U. S. Gov. canal, Kaukauna, Wis.; measurements made November 22 to November 30, 1892; scale, 50 feet to the inch. Edwards & Orbison." Was the map which I now show you made from measurements made by yourself,

or by yourself in connection with some other person; and, if so, whom?

515 A. I made the measurements with a rodman and men to help take the soundings.

Q. 7. On that map is shown, at the left-hand end on the upper side, what is there stated as "cross-sections of canal," showing four different cross-sections. What does that term mean in short words, "cross-section of canal"?

A. Giving the measurements of a vertical section of the canal; of the water surface cut by a vertical plane.

Q. 8. Does that mean the depth of water measured down from the surface of the water to the bottom of the canal?

A. Yes, sir.

Q. 9. Each of those cross-sections on the map show red lines about 50 feet apart, vertical lines. What do those red lines mean or indicate?

A. The depth below the surface taken.

Q. 10. The depth of the water?

A. Yes, sir.

Q. 11. Below the surface of the water down to the bottom of the canal?

A. Yes, sir; and I would say that the surface of the water is taken at the height of the dam.

Q. 12. At a time when the water was just at the crest of the dam, do you mean?

A. Yes, sir; at the crest of the dam.

Q. 13. Does the water flow over the whole length of the dam called the crest substantially at a level; as deep at one end of the dam as it is at the other?

516 A. Yes; within half an inch.

Q. 14. Which end of the dam is the lowest that causes that half inch difference?

A. I think the south end is the lowest.

Q. 15. Does the map now before you, to which we have referred, give a correct survey and correct measurements of the Government canal, as shown upon it, and the present width of the canal or as it was at the time those measurements were taken, and also a correct statement of the location, size, width, and capacity for passing water through the same of the present guard-lock near the head of the canal?

A. It does.

Q. 16. There is also written upon the same map the following: "Cross-sections first gateway at head of canal at A B, width taken from Jenne's map, in the Green Bay & Mississippi Canal Company's office," purporting to show the width of the gateway, or, as I will call it, guard-lock, within the outside walls of it, and also purporting to show three different depths of water at that same point. Do those depths of water purporting to be shown mean, and, if not, what else do they mean, that the water was of those depths from the surface of the bed sill or mitre sill in that guard-lock up to the surface of the water at that time?

A. They do not.

Q. 17. State what they do represent.

A. The surface of the water I assume at the same height as the top of the dam.

Q. 18. The crest of the dam?

517 A. The crest of the dam. Not knowing the depth of the old mitre sill, I assumed certain depths for the sake of calculation; first, four feet below the surface of the water.

Q. 19. At the crest of the dam?

A. At the crest of the dam. Second, five feet below the surface of the water, and, third, six feet below the crest of the dam or surface of the water.

Q. 20. What does the term "mitre sill" mean, or "bed sill"?

Mr. HOOPER:

Q. 21. You mean the surface of the water being assumed at the crest of the dam?

A. It is in this case, but I will state for the information of all that when I made the survey the water just happened to be at the surface of the dam.

Mr. MARINER:

Q. 22. Then as you run down you kept your datum the crest of the dam?

A. Yes, sir.

Mr. MARINER:

Q. 23. If the water run down, you didn't take account of that?

A. I noticed that it kept at the top of the dam. There being a very slight fall in the dam, probably about half an inch, in taking the soundings I didn't take any account of the very slight fall at that time.

Q. 24. Did you answer my question, "What is the meaning of the term 'mitre sill' or 'bed sill' of the guard-lock"?

A. All locks that support a heavy head of water usually have a pointed foundation at the foot of the gates for them to rest against and help support the gates, and they are made in the form

518 of a mitre or V shape, and therefore, I suppose, called mitre sills from that.

Q. 25. Is it not actually the bottom of the canal at that point, the surface of the bottom of the canal at that point?

A. What we mean by the depth of the mitre sill is the top of the sill over which the boats have to pass in going into the lock from above or below.

Q. 26. Therefore, if I ask you what is the depth of the water in the canal at a given time above the surface of the mi-re sill, it is equivalent to asking you what is the depth of the water in the canal above the surface of the bottom of the canal, is it not?

A. Above this mitre sill. This mitre sill virtually determines the depth of the water, I suppose.

Q. 26 repeated.

A. No; I would say that that would rather represent the shallowest place in the canal.

Q. 27. I didn't ask you that. I asked you if it didn't represent the depth of the water at that point in the canal.

A. Oh, at that point, yes.

Q. 28. Can there any more water in an ordinary flow, with a velocity of two feet to the second, get into that canal than will pass over the mitre sill?

A. No, sir.

Map offered in evidence and marked "Exhibit of the Kaukauna Water Power Co., 3."

Mr. ORDWAY: At about the time this map was made I asked the witness to answer me certain questions upon this subject and to make me a map of it, and he did it with what I suppose was
519 deliberation and care. I propose to read the questions and take his answers as I have them from him for short.

Q. 29. We wish your computation and statement as to the amount of water which could be taken down through the canal passing through the old guard-lock (gates wide open) for hydraulic purposes and not interfere with the navigation of the canal, showing about how many cubic feet per second of water would pass down the canal and how many horse-power could be used for hydraulic purposes without interfering with navigation, but more particularly showing what proportion of the water of Fox river at an ordinary stage could be passed down that canal through that old guard-lock for water-power purposes.

Mr. MARINER: We object to that. Mr. Edwards don't pretend to know anything about what the old gates were there.

A. The width of that guard-lock was, by Jenne's map of this canal in the office of the Green Bay & Mississippi Canal Company, 50½ feet clear and the depth not known, as far as I have been able to determine. For velocity of canal water I would judge that 100 feet per minute, average flow, in canal of the capacity of that now shown in map would be as great as should be allowed in interest of navigation. My judgment is that boats of usual capacity and power could readily run through a gateway at the head of this canal 50½ feet wide and one foot deeper than the draught of boat when the velocity averaged two feet per second. Boats seldom exceed 28 feet width of hull. The clear opening of locks used to be, from 1866 to 1876, about 33 to 34 feet. Since then perhaps a foot or two have been added by improvement of the locks. Thus boats
520 of a possible width of 35 feet may now pass through. The extreme low-water flow of dry year of the Lower Fox river I would place at about 125,000 cubic feet per minute; the low-water flow of a wet year at about 220,000 cubic feet per minute. Taking three of the months of lowest water during time of navigation and averaging for a long term of years, I would roughly estimate 160 to 170 thousand cubic feet per minute as being that average. Supposing the guard-lock to have a depth of water on the mitre sill as

given below and a velocity of 120 feet per minute, the volume passing through would have been as in table below:

Depth on sill.	Area section.	Volume per minute.
4 feet.....	202.0 sq. ft.....	24,240 cubic ft.
5 "	252.5 " "	30,300 " "
6 "	303.0 " "	36,360 " "
7 "	353.5 " "	42,420 " "
8 "	404.0 " "	48,480 " "

Q. 30. Assuming the average available flow of the river at an ordinary stage to be 150,000 cubic feet a minute, what part or proportion of that amount could have been passed through that old guard-lock and the canal, supposing the canal to have been 44 feet wide on the bottom, 60 feet wide at the top water line, and four feet deep at an ordinary stage of water (the banks of the canal having proper slopes to preserve the same in position), and not materially interfere with the navigation through the canal?

A. Very little, if any, water for power purposes could have
521 been taken from near foot of canal while boats of the capacity for which locks were made were passing. The size you state would be very small for towboats and extremely small for steamboats, which require a much larger cross-section than the former.

Q. 31. What depth of water should there have been upon or over the bed sill of the old guard-lock in order to pass over the same and through the canal steamboats drawing two feet of water? By bed sill of the guard-lock I mean what we have termed before mitre sill.

A. At least three feet, if no water was being used for power purposes.

Q. 32. What depth of water should there have been upon or over the bed sill of the old guard-lock in order to pass over the same and through the canal steamboats drawing four feet of water?

A. At least five feet, supposing no water being drawn for power.

Q. 33. What is the clear width of the two channels composing the present guard-lock?

A. Two openings of 40 feet width each.

Q. 34. What is the depth of water at an ordinary stage on or above the bed sill of the present guard-lock? And state whether the sides of both channels are perpendicular and whether the sides of the channel or channels of the old guard-lock were perpendicular.

A. The depth in boat-channel opening, with surface of water at top of dam, is 8.68 feet, and the other being obstructed by
522 two timbers leaves 6.93 feet in clear. The sides are vertical. I judge that the sides of the old guard-lock were vertical, as the quoin post partially left standing was vertical or nearly so.

Q. 35. What is the width of the canal at present, and what has it been during the past year, at the water surface?

A. Most of the way 110 to 120 feet and in bend as high as 150 feet.

Q. 36. What proportion of the flow of the river of 150,000 cubic

feet a minute can be passed down through the present guard-lock and canal for hydraulic purposes at the establishments where now used and not materially interfere with navigation?

A. I should judge some boats could pass not materially obstructed with flow, as found in November, 1892, when cross-sections were made by me and the flow was about 73,000 cubic feet per minute. Other boats might require the closing of part of the water wheels. The velocity averaged in the narrow part of the canal 121 feet per minute and in the guard-lock opening 93⅓ feet per minute.

Q. 37. You, having answered as above, add at the foot of the written document which I have presented to you these words: "The plan gives sections at the fastest flow by a test, and therefore at probably the smallest cross-section between guard-lock and mills." What does that sentence mean particularly?

A. Well, sections 5–6 and 7–8 are about the narrowest in the canal—about the fastest flow.

Q. 38. Do you mean by giving the fastest flow that at those cross-sections by you named the canal was the narrowest, and therefore the flow would be the fastest at that point?

523 A. Yes, sir; in the earth canal.

Q. 39. Now, I asked you, subsequent to the date of the questions which have now been put to you and answered, which date was the 2nd of December, 1892, another question, under date of January 4th, 1893: What proportion of the flow of the river of 150,000 cubic feet per minute can be passed down through that old guard-lock and the canal for hydraulic purposes, supposing the canal to have been 44 feet wide on the bottom, 60 feet wide at the top water line, and four feet deep at an ordinary stage of water, the banks of the canal having proper slope to preserve the same in position, and without regard to navigation?

A. Taking into account the material of the canal and allowing the sides to be riprapped (as we find the present canal), I would assume 2½ feet per second as being the safe maximum average velocity. This would give in the whole length a fall, by calculation, of three inches if straight; but, allowing for the bends and irregularities, I would place four inches as the loss of head from the pond to the flouring mill. This would give a cross-section of 188.2 square feet, which, at a velocity of 2½ feet per second, would give 28,230 cubic feet per minute, or nearly one-fifth of the assumed 150,000 cubic feet flow, as the proportion this canal could safely pass to mills without protection to clay bottom.

Q. 40. Now, in addition to the above, what velocity—that is, how many feet per second—would it be permissible or proper in a hydraulic canal to run water down it with due regard to the preservation of banks and bottom—or, in other words, so as to pre-

524 vent erosion—over a bed and through banks composed of the material of which the bed and banks of this canal were composed?

A. Well, I should say that two and a half lineal feet a second would be——

Q. 41. That question was put without reference to any navigation

of the canal, which would produce a greater velocity down the same at every period of time when lockage might take place in the passing of boats through the canal. Do you mean by your answer that a velocity as given would be safe and proper without regard to navigation of the canal?

A. No; it would be very much too great for passing of boats, and even as I give it it is very excessive, but the clay is slippery and holds pretty well practically.

By Mr. CARY:

Q. 42. In the answers that you have heretofore given, where you have referred to foot of canal what did you mean by it?

A. I mean the level that is shown upon the plan only.

Q. 43. You mean the foot of the level?

A. Foot of the level; lower end of the level shown upon the plan.

(By Mr. ORDWAY:)

Q. 44. You mean from where water is now being drawn for the red grist-mill down to the electric light plant as shown on the map?

A. Yes. sir.

By Mr. HOOPER:

Q. 45. In hydraulic canals what rapidity of flow is considered fit when you take into consideration only the loss of head?

525 A. It varies very greatly with the material.

Q. 46. With such material as this canal was composed of and the length of this canal?

A. I should say from two to two and a half feet per second.

By Mr. ORDWAY:

Q. 47. On the map to which our attention has been called and we have put in evidence as "Def't Kaukauna Water Power Company's Ex. No. 3" there appears at the left-hand or upstream end of it some dotted lines above cross-section "C D," which dotted lines are within "A B" and are located just over against the northeasterly end of the old Government dam as shown upon the map. What do those dotted lines represent?

A. They represent the fixing of the outline of the old guard-lock which is shown by the Green Bay & Mississippi Canal Company Jenne plat, fixed by a hollow quoin post, which was left until within a year at — near the point "B" last spoken of, and that was correctly located, and the shape of the lock and walls of the guard-lock where the gates turn into are shown turning on the hollow quoin "B" and one near "A," as it would be constructed by measurements given on the Jenne plat.

Q. 48. Until how late a day was the quoin post "B" visible to the eye at that point?

A. It has been dredged out some time during this past year of 1892 by the Government dredge.

Q. 49. When did you first become connected with the management of this canal—what year?

A. 1866.

Q. 50. Were those gates to that old guard-lock in when you first saw the guard-lock?

526 A. No; they were removed. Most of the guard-lock was removed.

Q. 51. Was the quoin post on the northerly side visible when you first saw the guard-lock?

A. I think not. I don't recollect of ever seeing it.

Q. 52. If the clear space between the exterior lines of the guard-lock were 50½ feet, as indicated on the Jenne maps, do the dotted lines represent it on the map Ex. 3 to a proper scale?

A. They do.

Q. 53. And is it correctly located on the map "Ex. 3" with reference to its geographical location over against the old Government dam, as shown on the map "Ex. 3"?

A. It is.

Q. 54. Was there any explanation which you would make in reference to those figures and letters which appear at the head of the canal, as shown on "Ex. 3," necessary or proper to our understanding of the situation at that time? If so, make it.

A. I would state I put in some dotted lines showing about the present shape of the head of the canal since the Government dredging during the past year, and I have also shown on the map here a cross-section showing the width of that same "A B." I assumed certain depths—4, 5, and 6 feet—for calculating the cross-section.

Q. 55. Do the two representations of the dam as shown on this map Ex. No. 3 now before you show correctly, or very nearly correctly, the different angle at which those dams cross the river?

A. They do. They show the correct angle and proper
527 relative location according to the scale.

Q. 56. On the same map, Ex. No. 3, still before you, there are diagrams down near to what is designated upon the map "lock" which are marked, commencing nearest to the lock and going upstream, first, "electric light;" second, "planing mill;" third, "Thilmany paper mill;" fourth, "Kaukauna paper mill," and still above that and across and upstream from what is marked "iron bridge," "flour mill." Are those the mills or establishments referred to by you in your testimony this morning as at which it would be practically impossible to draw water under the circumstances mentioned in that question and answer?

A. Yes, sir.

Q. 57. The upstream diagram, marked "flour mill," as to that, does it represent what has been familiarly called the "Gus Smith red mill"?

A. I believe it is sometimes called that.

Q. 58. Haven't you heard the use of that term in the taking of testimony in this case heretofore, locating that as the "A. L. Smith" or "Gus Smith" mill?

A. I think I have.

Q. 59. Now, are those different establishments correctly located to the scale of this map as upon the canal as they are standing upon the ground?

A. Practically; yes, sir.

Q. 60. And are those the establishments at which the Green Bay & Mississippi Canal Company, through their lessees, are and have been for years past drawing water out of the Government
528 canal?

A. Yes, sir.

By Mr. HOOPER:

Q. 61. How much of the old guard-lock represented on the Jenne map was on the ground in existence when you first knew the premises?

A. I don't recollect of ever seeing anything more than that hollow quoin post of that old guard-lock remaining.

Q. 62. Weren't the sides of that guard-lock there and everything of it there except the gates?

A. I don't recollect of ever seeing it.

By Mr. CARY:

Q. 63. Does the location of the quoin post as you knew it to exist correspond with its location as shown upon the Jenne plat?

A. Very nearly; yes, sir; as near as it can be measured.

Recess until 2.15 p. m.

COMMISSIONER'S OFFICE, *Feb.* 6, 1893—2.15 p. m.

Examination of witness EDWARDS continued on the part of Kaukauna Water Power Company.

By Mr. ORDWAY:

Q. 64. You designate "fair low stage" as a stage of water at which you make your computation of the flow of the river in the main and also in the south channel. (See page 89 of former testimony.) Should it not be based upon the fair average state of water on which calculations are based for hydraulic purposes as the
529 flow of the stream?

Mr. MARINER: That assumes that there is testimony showing what is the basis for hydraulic purposes.

A. That is a hard question. It don't seem to me hardly a question for an engineer. I have generally made my calculations on the "low," because the purchasers of water power have generally based their figuring upon a common low stage of water, and as to proportioning the water I couldn't say what would be the proper method of doing.

Q. 65. What is the height of the water in the river at a fair average stage of water as compared with a fair low stage—how much above?

Mr. HOOPER: I object to the question because it assumes that there is a difference between the fair average stage and the fair low stage, and I don't understand that there is any difference. I understand that they are synonamous.

Q. 65 withdrawn.

By Mr. CARY:

Q. 66. Is there any difference in the height of the water in the river at what you would call a fair average stage of water and at a fair low stage of water?

A. Yes; I should say a very great difference. I should say that a fair average stage would be the average of a fair year run of water, which would be very different from a fair average low stage.

Q. 67. Can you state what that difference would be between the two stages?

530 A. I cannot.

Q. 68. Can you approximate it?

A. Well, just from a rough estimate, I should say that it would add at least half of the fair low stage of water, pretty near, at an average stage. You have got to divide the freshet into the whole year—a fair freshet into a whole year—to add to it; and to that first question which was asked I said I hardly knew in relation to answering it. I should say that it would be rather unfair to bring that in as against mill-owners—the fair average rather than the fair low.

Q. 69. Is there any difference between a fair ordinary stage of water in the river and a fair low stage, as you have termed it in your testimony?

A. No; I should say they were similar—the same meaning.

By Mr. ORDWAY:

Q. 70. How many seasons of the year is there a considerable variation in the flow of the river at Kaukauna?

A. Well, of late years it has been mostly one great variation, and that is in the spring freshet. The rest of the year is usually determined by the amount of the water used by the mills at Neenah and Menasha.

Q. 71. When the water at Neenah and Menasha doesn't flow over the crest of the dam all the water which is used substantially, with the exception of some small brooks coming in below, is that water which is let through the wheels, is it not, of the mills and establishments at Neenah and Menasha?

A. Yes, sir.

Q. 72. How many years last past has that been the fact?

531 A. I should say eight or ten years. It has very little escape over the dam except in the spring and first of the summer.

Q. 73. Before your soundings of the river in 1882, upon which your map "Ex. A," prepared for the plaintiffs in this suit and put in evidence, was made, upon your judgment and knowledge of the stream and its flow, its rise and its fall, what proportion of the water

was due to the respective channels, north and south, without reference to these measurements?

A. My judgment was formed about or before that time that there was about one-fourth due to that channel, without having made any measurements—the south channel—of the whole river; but——

Mr. MARINER: But what?

Mr. ORDWAY: He can make his explanation a little later.

Q. 74. You made for me, Mr. Ordway, the map which I now show you, purporting to show the direction of the channel of the Fox river from a short distance below the head of Island No. 4 up above the Government dam, above the first creek that puts in on the north side, and very nearly up to what I will assume to be (don't appear here) the second little creek, which is on the north side. Did you make that map at my request?

A. Yes, sir.

Q. 75. There appears on the face of that map these words: "Location of Kaukauna dam and vicinity; scale, one inch to 200
532 feet. From office of Edwards and Orbison, 1889." Does the map show correctly the direction and course and the location of the respective banks of the Fox river so far as they are shown up and down the river by that map?

A. Yes, sir; according to that scale; as near as practicable.

(By Mr. CARY:)

Q. 76. Made from actual surveys, were they?

A. Actual surveys; yes, sir.

Mr. ORDWAY: I offer the map in evidence, marked "Defendant Kaukauna Water Power Company's Exhibit No. 4."

Q. 77. Is it or is it not true that while the water comes around the bend which is above the Government dam and mouth of the canal that its direction is pretty nearly directly into the mouth of the south channel; and, if not, at what angle is it variant therefrom, about?

A. I should say the direction would be full greater into the mouth of the main channel than the south channel.

Q. 78. I want you to give me the angle that stream comes around the bend in. Upon your map the points of the compass are designated by an arrow. I ask the witness to give me the direction of the north bank of the river from a point—if you will give me the number of feet above the dam; your scale is 1 inch to 200 feet.

A. About 800 feet.

Q. 79. From a point about 800 feet above the mouth of the canal.

A. I should say that it was about equally towards each stream.

533 Q. 80. I ask you what is the direction; whether it is north or northwest, or whether it is running southeast, or what other direction is it over that 800 feet.

A. About south. Well, I should say it was about south 60 or 65 degrees east, and that it would flow about equally towards both channels.

Q. 81. I don't ask you that just yet. I was asking you now for the direction. I ask you now if the map doesn't show the direction of the south bank from point to point opposite to the distance which I have called your attention to on the north bank about in the same direction, to be about parallel with the line of the north bank.

Mr. HOOPER: I object to the question because it appears from the map, and all the witness can tell by examining the map is what any one else can tell by examining the map just as well.

A. Not very far from parallel, but contracting as it goes down river, I should say, a little; coming towards each other a little as going downstream.

Q. 82. Is it not true that water in coming around a bend, as is shown to exist in the Fox river just above the Government dam, goes with increased force and rapidity over against the opposite shore from the bend?

A. No; I should say not.

Q. 83. Suppose there was in a state of nature a point of land on the northeasterly side of the river, just over against the location of the old guard-lock, which came down quite abruptly to the
534 edge of the water, and suppose that point of land was just at or about the letter "U" upon the map which is now before you, "Ex. No. 4," wouldn't the water coming around the bend, which is shown above the dam, be by the influence of that bend forced out of its natural flow more largely over against the opposite bank of the river?

A. In deep water sometimes that is the case, but in shallow water and a large body of water moving rapidly the tendency is to keep the tangent. The great momentum of the water tends to keep the tangent; but in a slight flow there is a tendency to deflect from bank to bank more. There is a certain tendency to throw it to the other bank, but not to overcome the volume of water in a very rapid current.

Q. 83 repeated.

A. Yes; it would be more largely than otherwise.

Mr. ORDWAY: Now, then, stop right there. You will have an opportunity to explain.

Q. 84. Isn't it true that for some little distance downstream from such a projecting point into the river that there is always more or less of an eddy; more or less still water immediately below the point?

A. Yes, sir.

Q. 85. Why, then, do you say that in your opinion the formation of the banks of this river at about the mouth of the Government canal are such as not to increase the flow into the south channel?

A. Well, from the philosophy of moving water and also
535 from the actual bed of the stream as we find it—two reasons.

Q. 86. You mean as you find it on this map now?

A. No; as we find it in the bed of the stream.

Q. 87. Isn't it——

Mr. HOOPER: I insist the witness shall have an opportunity to answer the question.

Q. 85 and the answer thereto read.

Answer to Q. 85 continued. I would say that the conditions here of a rapids some ways up above the dam down to a long point below the dam would create a great rapidity of water; that rapidity of water would give a great momentum to the body of water which would tend to keep a tangent, but being deflected by the shore is thrown, of course, out into the river farther. This would have a tendency to carry it towards the head of the south channel to a certain extent; but the larger volume of water flowing in the center of the river and being crowded by the water on the north shore would, as a resultant, carry the water pretty well down the north shore, for the reason the momentum is very great; greater than the power of deflection; therefore it would hug, I think, the north shore; and I think that the proof is that it has scoured to the rock, which is deeper on the north shore, and piled more gravel in the south channel than in the north channel.

Q. 88. In a stage of water a little above the average on the Fox river at Kaukauna, wouldn't the water coming around the
536 bend above the dam, by reason of the projection of the point which I have suggested as existing, be found to be some considerably higher—I refer to the surface of the water in measuring down from a bench—than it would be found against the northeasterly shore in what I will call the eddy.

Mr. HOOPER: Objected to. There is no proof there is any point there and no proof there is any eddy there.

A. I will have to explain in answering this. I think what my view in regard to the movement of the water would be.

Mr. ORDWAY: That is just where your explanation leads us, and we don't know half as much about it as we did before—that is to say, when you gave us a very short answer to the question put to you. Now, I ask a very simple question, from your knowledge as a hydraulic engineer if that wouldn't be the natural effect.

A. I think the water would have a tendency to pile up upon that point.

Q. 89. Upon which point?

A. That you suggest near "U," on the north side of the river. I think it would have a tendency to pile against that point. Behind that point there might be an eddy; downstream there might be possibly an eddy, and I think that the water would stand higher on that side of the river on account of the momentum from the body of the water from the rapids above than it would on the south side of the river. I think the height of the surface would be greater on the north side than on the south side.

537 Q. 90. At what point on this map?

A. Opposite "U;" square across the river.

Q. 91. How would it be opposite the letters "Gov.," in the canal, as shown on this map?

A. If the depth of the bed of the river was lower on that side than on the south channel side, on the south side, then I would say that the water would have a tendency to fall in the gorge and have a lower level.

Q. 92. Where?

A. In the eddy below the point at "U."

Q. 93. On which side of the river?

A. On the north side. In case there was a gorge or deeper part of the channel there, there might be a tendency for a lower level.

Q. 94. Isn't it true that the bed of the stream is deeper on the northeast side of the river, over against the retaining wall, than it is on the southerly side?

A. Yes, sir; it is.

Q. 95. How much difference?

A. Well, the cross-sections show. That I have put in evidence.

Q. 96. About how much difference?

Mr. HOOPER: I object to the question while the cross-sections are in evidence, showing exactly the distance.

Q. 96 (continued). If you remember?

A. I don't remember how much. I should say a foot or more.

538 Q. 97. What would become of the water that was thus forced over onto the south side?

Mr. HOOPER: I object to the question because the witness don't say there has been any water forced over onto the south side. He says that the water might fall into a lower spot below this point.

A. The volume of water that had a tendency to be forced from the north side towards the south side, and did probably effect some water towards forcing it that way—affect the height—would, of course, add a little to the south channel, but the tendency would be to move towards the deeper channel and the lower surface that might, as in this case, exist on the north channel, rather than on the island channel; to draw itself back into the north channel before it got to the head of the island.

Q. 98. Suppose there was no south channel there and the south bank of the river extended from a point above the mouth of the Kaukauna canal, as shown on this map, pretty nearly directly down to the head of Island No. 4, and the conditions existed which I have been asking you as to, to wit, the projection of the point on the north side and the forcing of more water towards the south side, in view of your answer that the water would be likely—the surface of the water would be likely to be higher on the south bank of the river than on the north, in what I call the eddy, how far downstream, on the reach of the river as it exists there at Kaukauna below the dam, it being about 1,000 feet from the dam down to the point by the city bridge—how far down the stream would it
539 be before the water would in its natural course reach—before the surface of the water would reach a level across from north to south bank?

A. It probably wouldn't reach a level with the formation of the bottom as it is.

Q. 99. Is it not true, then, that more water would be forced into the south channel, there being a south channel there, than is naturally due to it from a survey by levels, supposing there was no point of projection at or about the letter "U" on the map shown, as I have supposed?

A. I should say that the greater tendency would be to force it into the north channel.

Q. 100. Didn't you, as a matter of fact, find the surface of the water higher on the south side of the river at the time you made the map Ex. A, which was made from your surveys and measurements made in 1882?

A. Yes; I believe I did, but——

Mr. ORDWAY: You did, but perhaps you can't remember how much the difference is.

(By Mr. CARY:)

Q. 101. What was the cause of its being higher on the south bank of the river—this, I suppose, was below the dam?

A. Below the dam. I think from the contour of the bottom of the river. The tendency is such that water coming from above has a general tendency to sink into the gorge, as we will call it, and there is a greater volume flowing, which takes away from the slower water that is running on the shallow gravel bottom, and,
540 from a greater velocity, it gets away from the rest of the water of the river quicker, we will say, on that slope, being a greater slope down the north channel; and it gets away from the sluggish water which is coming down on the more sluggish side, the south side, and therefore runs towards the gorge, which is on the north side. I think that is the cause, rather than any compression of water forcing it up there.

Q. 102. If this bend which is shown on the map "Ex. 4" now before you had been immediately above the letter "U" around at a much greater angle—for instance, 45 degrees or greater than that—wouldn't it have a tendency to force more water into the south channel?

A. Yes, sir; it would, more, but with the bottom as it is——

Mr. ORDWAY: Don't go so far with the answer; I will ask you another question.

Mr. MARINER: I won't stay here if you don't let the witness answer. We will have a ruling whether Mr. Ordway may interrupt the witness or not.

Q. 103. Why is it that the water——

Mr. MARINER: Wait a moment. I make the objection that Mr. Ordway is constantly interrupting the witness.

Mr. HOOPER: I ask the commissioner to rule upon this point.

The COMMISSIONER: I think the witness should be allowed
541 to complete his answer, but I caution the witness to answer the question as closely as possible and put in nothing that

is not directly to the answer. Under those instructions the witness may complete the answer.

WITNESS: Well, I will cross out after the "but."

Q. 102 and answer read to the witness.

WITNESS: It would have a tendency, I thought I said.

Q. 103. What is the reason that heavy bodies of water passing around the bend produce erosions or tearing away of the bank almost invariably upon the opposite side from the bend?

A. On account of that deflection.

Q. 104. Isn't the surface of the water usually, if not almost invariably, very considerably higher on the side of the river where the erosion takes place?

A. That depends upon the currect.

Q. 105. Under such circumstances?

A. It is usually some higher, except the river bed is such as to counteract it.

Examined by Mr. HOOPER:

Q. 106. If the surface of the water on one side of a river is lower than the surface on the other on account that the bed of the river is lower on that side, on which side is the more rapid current?

A. On the side of the deeper channel.

Q. 107. The lower bed?

A. Yes, sir.

Q. 108. Now, is it a fact that from the Government dam
542 down to the head of Island No. 4 the bed of the channel is considerably lower on the north side than on the south?

A. It is.

Q. 109. Which side has the more rapid current?

A. The north side.

Q. 110. How much the more rapid current? Give us as nearly as you can from the dam down to the head of Island No. 4.

A. I should say it was probably double generally.

Q. 111. Now, you spoke of a gorge along in this vicinity, did you?

A. Yes, sir; in that gorge I mean; in that deeper part.

Q. 112. And that is where the more rapid current is?

A. Yes, sir.

Q. 113. From what you know of the river in that vicinity and the wearing of the channels, was there ever a point at the point "U" on this map projecting out into the river sufficiently far to overcome the tangential force of the stream in passing around this curve?

A. Not to a very great extent. Of course, it would operate considerably, but the river being so broad and so large a volume of water to back against the current that was thrown around from the point would overcome that, I think, to a very great extent.

Q. 114. Have the dams at Neenah and Menasha within the last ten years increased or diminished the low-water flow of the Fox river—the dams and the manipulation and handling of them
543 in drawing water?

A. They have had a tendency to increase the natural low-water flow.

Q. 115. Have they tended to increase or diminished what you call the fair average stage on which calculations are based for hydraulic purposes?

A. The fair low stage? Yes; I think it has increased the fair low stage.

Q. 116. The fair average stage, on which calculations are based for hydraulic purposes?

A. I have generally based it on the fair low stage. That "fair average stage" I haven't intended to use, but "fair low stage."

Q. 117. What do you consider the volume of water in the river at a fair low stage?

A. About 160 to 170 thousand cubic feet per minute.

Q. 118. On what stage are all hydraulic calculations based on that river, so far as you know, and have they been in the last 20 years?

A. On the fair low-water flow.

WITNESS: I was going to explain that in speaking of this gorge I want you to understand there is no regularly defined gorge there. I used the expression "gorge" to illustrate that the water would drop into such a gorge—into such a deeper channel, but here there isn't a regularly defined gorge, but a lower part of the river and smooth rock, which gives the appearance of a gorge, and is
544 to a certain extent approaching a gorge in the fact that the water falls into that deeper and smoother channel and gets away more readily on that part of the rapid next to the United States Government canal on the north side of the river than on the other.

(By Mr. ORDWAY:)

Q. 119. Whereabouts is that gorge?

A. I wish to explain that it is not a regular gorge; it is merely a little deeper part of the river and smoother rock bottom, which commences a little north of the center of the river a few hundred feet below the dam—two or three hundred feet—and works towards the north side of the river, so that it is smooth rock, perhaps, five or six hundred feet down from the dam, and a good deal of smooth rock in the river—from the center of the river or near the center—just north of the center; perhaps 2 or 3 hundred feet below the dam or 4 hundred feet down to six or eight or nine hundred feet, I should say, below the north end of the dam near the Government wall.

Examined by Mr. ORDWAY:

Q. 120. That would carry that—what we call for short "gorge"—down more than halfway, would it not, to the pond or to the city bridge?

A. Yes; pretty near halfway, I should say.

Q. 121. Suppose that stone was excavated from that place to put into the retaining wall which supports the river side of the canal,

would not that explain the fact of there being such a low place there?

A. No; not the whole of it.

Q. 122. Why?

545 A. Because it was so much greater; enough to make a dozen walls. There would — enough in that lower part to make a dozen walls.

Q. 123. How deep was that depression called a gorge?

A. The water would stand in that on a fair low stage, I should say, three feet to three feet and a half—perhaps, I will say, three feet with a rapid current—and in other parts of the river it would be two feet or a foot and a half. It would be perhaps a foot deeper.

Q. 124. That depression would be from a foot to a foot and a half deeper than the general bed of the stream?

A. Yes, sir; I should say so, and that is quite wide in places—quite good width; in other places it narrows up somewhat.

Q. 125. Did you hear the testimony witnesses gave in February and March of '90 as to the fact that stone was excavated from the north side of the river, outside of the retaining wall of the Government canal, for the purpose of constructing that wall?

A. I don't know that I heard the evidence, but I have heard it said so.

Mr. HOOPER: By "excavation" you mean simply the taking out of the loose stone?

Mr. ORDWAY: Some of the witnesses testified that the rock was quarried.

Q. 126. Supposing it to be a fact that the surface of the bed of the river on the north side, over against and near to the retain-

546 ing wall of the canal, was lowered in the construction of the canal and the wall from the matter of eight inches to a foot and a half, wouldn't that produce all the excess of current which you have mentioned as existing or being likely to exist below the dam in answer to Mr. Hooper's question?

A. I think not.

Q. 127. Suppose it was lowered a foot, wouldn't it produce that excess of rapidity which you mentioned? I have reference to the surface of the bed of the river as put in the other question.

A. The breadth has a great deal to do with it, and it is generally lower on the whole side of the river there; the river is generally lower, the whole side of the river, and the deepening in a certain width to make the wall I don't think would be enough to account for it.

Q. 128. You never saw the bed of the river, did you, before the wall was constructed?

A. No, sir.

By Mr. CARY:

Q. 129. And you don't know whether that depression in the north channel existed prior to the construction of the dam?

A. Not from personal knowledge.

Examined by Mr. HOOPER:

Q. 130. Along the Fox river where the shore is flat and down near the level of the water on one side, and there are bluffs on the other side with the water running close against the bluffs, what is the fact in regard to the rapidity and force of the stream; is it on the flat side or on the bluff side?

A. On the deeper side, usually. Where there is a deeper
547 current, of course, it is more rapid, and it is more rapid on the outside curve of bends, generally.

Q. 131. Isn't it on the outside curves of bends where you find the sharp banks?

A. I mean outside of the water; I mean the convex side of the water and concave side of the land would be the tendency to be the faster current and deeper channel.

Q. 132. Isn't it also the fact that there is a more rapid current under the bluffs than on where the opposite side is flat?

A. Well, that wouldn't hold good in all cases, because the bluff might not go down into the water; might be a ledge of rock there.

Q. 133. Where it does go down into the water?

A. Where it goes down deep into the water, of course, it would.

Q. 134. Doesn't the flat surface on one side indicate shallow water and sluggish stream, on that side where the flat shore is above the water?

A. Not above the water don't always indicate it. There are places in Kaukauna and on the rapids where there is quite a bluff down to the river and shallow rock running out.

Q. 135. I am talking about where the earth comes down flat.

A. Where it is caused by undermining the bluff it is.

Plaintiff- now examines the witness as plaintiffs' witness-in-chief:

Q. 136. Have you ever made surveys and cross-section measurements of the north and middle channel, at and above the
548 head of Island No. 3 so as to inform your judgment in regard to the volume of the flow of water in those respective channels?

A. I have.

Q. 137. At whose request?

A. At Mr. Ordway's, I think, or Mr. Vilas'; both for the same party.

Q. 138. About when?

A. About four years ago, I should say.

Q. 139. Did you then make a conclusion as to the flow in those respective channels?

A. I did.

Q. 140. What was your conclusion?

A. That there was fully one-half the flow in the north channel.

Q. 141. Fully one-half the flow of the whole river?

A. No; one-half of the flow of the north channel and possibly a little more.

(By Mr. CARY:)

Q. 142. Do you mean in the middle channel?

A. In the middle channel; there is one-half of the flow in the middle channel of the flow in the north channel.

Q. 143. That is, they stood in the relation of one in the middle channel to two in the north channel?

A. Yes, sir; a little in favor of the middle channel.

Q. 144. The middle channel has got a little more than one-third of what passes down the north side of Island No. 4?

A. Yes, sir.

549 Q. 145. Isn't it true that after the water passed into the mouth of the middle channel before the middle channel was improved by Meade & Edwards that a portion of it passed out north down into the north channel through a channel the mouth of which was walled up in the construction of the Meade & Edwards improvement?

A. Yes, sir.

Q. 146. Have you ever surveyed or measured and estimated the amount of water which at a fair low stage—I mean by that the same stage which you have referred to in your deposition in determining the relative proportions between the north and south channel'—would have or did pass out of the middle channel and down into the north channel before the improvement of the Meade & Edwards water power through the channel referred to in the next prior question?

A. I never measured the volume of water, but I have observed it before any improvements were made.

Q. 147. Have you no map, cross-section, or survey of that channel so cut off by the wall referred to?

A. I have had maps showing the plan of it, but not the cross-section of the flow of water.

Q. 148. Have you anything showing the depth of water in that channel?

A. I have not.

Q. 149. Have you ever had?

A. I have taken a great many levels over that country; I may have taken some levels; guess I did take some; had to take them to build the wall.

Q. 150. Have you any that you remember now?

A. Not that I remember; no, sir.

550 Q. 151. If I should show you a map which you made in about 1886 or 1888 of the mouth of the middle channel, showing the width of it, have you any idea that you could fairly approximate to the depth of it from that map?

A. No, sir; not from the map, but I could——

Q. 152. I think, then, I will ask you to venture to make a guess. What was the size of that channel so walled up compared with the whole middle channel?

A. Well, it was virtually nothing.

Q. 153. Why?

A. The rock bed of that channel was so contracted and so high originally before any improvements were put in that there wasn't much of a volume went down except in a freshet.

Q. 154. Was there another channel which lead out from the middle channel over southeasterly and discharged out in the south channel instead of passing that same water all the way down through the middle channel?

A. There was, right at almost the head of the middle channel.

Q. 155. What was that channel called, if there was any name that it went by?

A. Lately it has been called "the slaughter-house channel."

Q. 156. What was the size of that channel with reference to the size of the middle channel, as to its capacity and as to its carrying water down the same?

A. Virtually nothing, except in a high stage.

Q. 157. How high a stage?

A. Well, in ordinary low water you could step across on
551 the little flat stones; throw in a little flat stone and step across the whole channel.

Q. 158. "Slaughter-house channel?"

A. Yes, sir; on low water.

Q. 159. Was that true of the channel which led out north from the middle channel which I have referred to as having been walled up?

A. Yes; about the same with that.

Q. 160. Were either of these channels ever dry, to your knowledge?

A. Were before any improvements were made. I don't recollect that fact, but after improvements were made I recollect. I recollect walking over that when there wasn't five-horse power under ten-foot head going through, before; but after the improvements were made that was stopped up entirely.

Q. 161. You mean by that walled up?

A. Yes, sir.

Q. 162. Well, would there pass five-horse power into the lower stage of water?

A. Yes, sir; I have seen it when there wasn't more than five-horse power under ten-foot head.

Q. 163. That would run out through that channel into the north channel?

A. I shouldn't say there was more than that, and possibly sometimes might have been dry. I don't recollect noticing it specially when it was perfectly dry.

Q. 164. Would there five-horse power have gone out through the slaughter-house channel in a low stage?

552 A. Yes; I think in a low stage that there would be perhaps five, and then in a good fair stage, when the water was up reasonably—fair low stage—it would be perhaps six inches, and I have seen it—have not been across it many times—when it might be six inches, and I would have to get thick stones to step over, and

then perhaps fifteen or twenty horse power would go through under ten-foot head.

Q. 165. That water which passed out of the middle channel in the manner I have spoken of down these two channels would not properly be denominated as belonging to the middle channel, would it?

A. Well, no, sir; I suppose not. I suppose it was deflected from its natural course.

Examined by Mr. HOOPER:

Q. 166. Are these channels which you have mentioned running across Island No. 3 and Island No. 4 recognized at all in the Government surveys as channels?

A. They are not.

Cross-examination by Mr. MARINER:

Q. 167. Captain, did you make any attempt to find the old sills of the original guard-lock?

A. I did not.

Q. 168. All you know about it, then, is what you saw and took from the Jenne map?

A. Yes, sir.

Q. 169. About the location?

A. Except I found one of the posts—the quoin post.

553 Q. 170. You have given some figures as to the amount of water that you suppose would run through those gates if they were open. How much fall would it have taken at that point to have doubled the velocity for a space of ten feet or twenty feet?

A. Not a great deal, under the volume that I gave going through, I think. I think that what I stated as the volume that would pass through would not require only a fraction of an inch, and probably double the volume would not lose much more than from one to two inches of head.

Q. 171. Do you know who constructed that canal?

A. I do not.

Q. 172. How large was the canal when you first saw it?

A. Virtually the same as now. Some places there has been some dredging, but most of the way not any to widen it.

Q. 173. What is the nature of the bank on the land side of the canal?

A. It is quite steep and it is inclined to slide.

Q. 174. Aren't there evidences of its having slid a good deal there?

A. Quite considerable.

Q. 175. Do you know whether when the canal was constructed it was constructed by building an embankment on the outside of the canal and leaving the old bank of the river for the land side of the canal?

A. It appears to be that way. There may have been possibly some excavation on the land side.

Q. 176. How much of the bed of the canal was, from ap-
554 pearances, in the original bed of the river?

A. Well, I should say, from the head of the canal down to the great bend, as shown on the map, that probably half or so of the canal encroached on the river.

Q. 177. That would have reduced the flow of the river that amount, I suppose, would it not?

A. It would have reduced some, of course.

Q. 178. What cross-section was taken out of the flow of the river?

A. Yes, sir.

Q. 179. Who, as a matter of history, do you understand constructed that canal?

A. Well, I can't say, I am sure. I heard—had the impression—Conkey had something to do with it.

Q. 180. I don't mean who did the work, but under whose contract.

A. I think it was Morgan L. Martin.

Q. 181. And it was constructed under his contract, as you understand it?

A. I think—that is what I have understood.

Q. 182. Is he the same Morgan L. Martin who owned half of the property between the canal and the river down there?

A. Yes, sir; that is the same one.

Q. 183. Do you know whether Mr. Martin constructed this canal with the idea of using it as a head race to draw water from over on the site of these mills you have indicated on this map?

A. Yes, sir; for navigation purposes and hydraulic purposes. I haven't studied the matter any more than to know that that
555 was the object. I don't know what contracts were made nor anything—the conditions.

Q. 184. You are familiar with this canal throughout the whole length of it, are you not?

A. Yes, sir.

Q. 185. I mean the Lower Fox river. You are familiar also with the maps in the office of the Green Bay & Mississippi Canal Company?

A. Yes, sir.

Q. 186. Showing what was the layout, so to speak, originally of the canal company to create this improvement?

A. Yes, sir.

Q. 187. At this particular point do the maps show a design of using any part of this property for water power?

A. Yes, sir.

Q. 188. Do the maps show the design of using any other parts of the improvement for water-power purposes?

A. At this point?

Q. 189. No; at any other point.

A. Yes; nearly every dam that the canal company had an interest in shows plans for water-power lots.

Q. 190. You think, as I understand you, that the canal here was

not of sufficient capacity to have passed a large fraction of the river—of what you call the ordinary low-water flow of the river?

A. Not as constructed. With navigation purposes to be added, I don't think it was hardly suitable to carry much more than
556 half or half of the river.

Q. 191. At any other place on the river where there is indication of an intention to use water in that place have you observed the facilities that the plan of the canal provided for using water power?

A. I have.

Q. 192. What is the rule with regard to all of those places? Have they furnished ample facilities or otherwise?

A. In some places they have not laid out lots only for a very small fraction of the water power. Some places, perhaps, they have laid out enough to use the whole power, but generally not enough to use the whole power.

Q. 193. So in the construction of the dam and the canals and improvements, where they have indicated apparently an intention to use water, has their actual construction been such as to enable them to use anywhere near the water power which the plans, the maps, show was probably designed to be used?

A. Not generally.

Q. 194. If Mr. Martin undertook to construct this canal large enough to use all of the water power that was furnished there, do you think he made a mistake?

A. Yes, sir; I should say that he had.

Q. 195. You think that the average low-water flow could not now be used through that canal?

A. No, sir; I don't think it would be practicable to use it.

Q. 196. Isn't it probable that the upper end of the canal from Smith's mill or about there isn't now as deep as it was when
557 it was constructed?

A. In some places it may not be, but I think generally it is practically as deep; in some places deeper by means of dredging that has been done.

Q. 197. Isn't it a fact and isn't it probable that the bank has slid in there very much more than it has been dredged out?

A. I don't know, of course, how much it has been filled in, but since I have been there, since 1866, I don't think it has moved more than a foot; possibly two feet. I don't think that there has been much more than that movement. There has been a little. Whether that was done by some excavation on behind, to a great extent, I don't know, when it was originally built. If it wasn't is has probably filled in 8, 10, or 12 feet by sliding, if it wasn't done during the time of construction.

Q. 198. I think Mr. Law says that the canal was constructed half of its width in the river. Now, did you find in sounding the upper end of the canal that the river bed was solid rock?

A. No; I did not. It is not as deep as the river bed, I think, in any place that I have sounded, and I have sounded a good many.

Q. 199. How much does it lack of being as deep as the river bed?

A. Well, I couldn't say at present, but my impression is, most of the way, three or four feet higher than the river bed—that is, along the lower part. Up near the lock or near the head-gates might be within two feet, possibly, I should guess.

558 Q. 200. How high is it from the crest of the dam down to the rock right on the lower side of the dam?

A. Well, I couldn't give the height, but I should make an estimate of about ten or eleven feet; perhaps three feet of water on the rock, and the dam about eight feet. Perhaps eleven feet, I should estimate it.

Q. 201. And your figures, as I recollect it, are that the water is six or seven feet deep in the canal?

A. Well, I think there are places, though, that are deeper than that. It shows on this map. It shows soundings there as high as eight feet, I see, depth, and that is about the highest; eight feet three.

Q. 202. Mr. Ordway asked you something or other about a point which he thinks projected in the river about where the Government canal comes in. Have you ever seen a time when the water was out of the dam there at Kaukauna?

A. I saw while they were building the new dam at times, and then it was pretty near dry in the space that they were putting in at one time I recollect.

Q. 203. Did they cut out the old dam? Was the old dam gone so that the water ran out?

A. No; they had a coffer dam below, I think, the old dam, as well as the old dam itself. They used the dam partially, and then had another dam below that to turn the water from part of the dam while they was building the other part.

(Mr. ORDWAY:)

Q. 204. Was the stage of water so that it interrupted navigation?

A. Oh, in the canal?

Q. 205. The pond above the dam.

559 A. In the pond above the old dam I never saw it shut out.

(Mr. ORDWAY:)

Q. 206. Never saw it shut out?

A. No; I guess not.

Q. 207. So the water never has been out of there?

A. No, sir.

Q. 208. And you don't know how the ground stood in a state of nature over the bed of the canal where it runs into the pond or runs out of the pond?

A. No, sir; I don't know. There has been a good deal of dredging there.

Q. 209. Is there anything on the face of the bank above to show that a point came down there some time or other?

A. There is a little indication of that by the bluff, I think.

Q. 210. Immediately at that point?

A. Well, I couldn't say it is just there. It appears a little more bluff, and the shore rounds out a little above there where the dredging seems to have begun, to dredge into the canal.

Q. 211. Well, how much does it round out?

A. About as it shows on the map Exhibit 4.

Q. 212. Not any more than this shows here?

A. No; not at present.

Q. 213. How was the bank made between the canal and the river?

A. Well, it appears to have been an embankment placed against the face of the wall next to the canal; a wall built and
560 earth-work probably carried up about the same time with the stone-work.

Q. 214. To make the stone-work tight?

A. Yes, sir.

Q. 215. How high is that stone wall?

A. I should say that it was probably 14 feet high to the rock at near the dam. It is more than that right at the end of the dam, and then it steps down to perhaps 13 or 14 feet above the rock, below those steps, near the dam; steps down, I should say, five feet or so, four or five feet, and then runs nearly level on top, and it adds to the height of the wall according to the slope of the river. I should say at the bend it might be perhaps twenty feet high.

Q. 216. Whereabouts do you locate the bend; how far above Smith's mill?

A. It shows on Exhibit 3.

Q. 217. That is, at the figure "4," would you call it?

A. Yes; possibly opposite the figure 4.

Q. 218. Down to there you think perhaps twenty feet high?

A. Above the rock bottom.

Q. 219. Does the north end of the old dam stand on the rock?

A. Well, it is either on rock or hard bottom that might have been in there when they put in that spar dam, but the Government dam they tried to get that to rock all the way across—the U. S. dam, the lower one—I couldn't say whether they tried to get the timbers of that down on solid rock or not.

Q. 220. How deep is the water above the Government dam?

561 A. I should say probably 10 feet deep down to the rock. They filled in, you know, more or less earth, clay, &c.

Q. 221. Do you understand any part of this embankment is the original surface?

A. No; I think not.

Q. 222. So that all of this embankment must either have been taken out of the bed of the canal or taken from the bank above. It is foreign material.

A. Yes, sir; it appears to be, so far as I have seen it.

Q. 223. How long was this guard-gate in, do you understand?

A. I couldn't say. I don't recollect seeing anything more than the hollow quoin post.

Q. 224. Do you know as a matter of history?

A. I do not.

Q. 225. You said it proved unsuccessful.

A. I understand it burst the gates and was too contracted, and so it was dredged out.

Q. 226. The gates were so long. They were a good deal longer than the gates of locks, were they not?

A. Yes, sir.

Q. 227. This plan that you have made here of these guard-gates, it was only a single pair of gates, was it?

A. That is all.

Q. 228. It wasn't a regular lift-lock?

A. No, sir.

Q. 227 (continued). You have taken, you say, from the Jenne map?

A. Yes, sir.

562 Q. 229. These cross-sections that you have made are the cross-sections, as you understand it, at the shallowest part of the canal?

A. Most contracted part; except the guard-locks, possibly.

Q. 230. Are they equal in capacity to the guard-lock that the Government has put in there lately?

A. Yes, sir; and more so; greater capacity.

Q. 231. I understood you this morning that the velocities at these cross-sections was quite a little more than the velocities at the guard-lock?

A. Well, I hardly think—not on the same volume of water I hardly think it could be. (Reading from his printed answer heretofore given:) "The average velocity in the narrow part of the canal 121 feet per minute, and in the guard-lock openings 93⅓ feet per minute." Yes, I am mistaken; the guard-lock cross-section is greater than the smallest cross-section on the canal.

Q. 232. At the time you made these measurements how much water were they actually using at these mills?

A. They were using about 73,000, I think I gave, cubic feet to a minute.

Q. 233. Suppose the guard-lock had been the original guard-lock with 50-foot opening and had been set down on the solid rock, what flow would it have permitted to enter the canal?

A. Well, from one-third to one-fourth more, I think.

Q. 234. You have made your estimates at 2, 3, and 4 feet for miter sill.

563 A. Oh, in that old original guard-lock?

Q. 235. Yes; supposed to have gone down to the rock.

A. Why, it would have been, probably, nearly double the deepest; double the six feet nearly, because the greater depth would give less friction and greater volume and nearly six feet with the same loss of head.

Q. 236. How much water could have been drawn through that 50-foot lock if it had been down to the rock?

A. Well, at the velocity of 120 cubic feet per minute, about 60,000, probably, if we could get 10 feet in depth. I think we would have got to the solid rock.

Q. 237. Now, suppose they had taken the water away from that, how much more than 60,000 feet could you have passed through that lock?

A. Could pass the whole volume of the river at common low-water stage. It would take a great deal more than the volume of the river with a two-foot head.

Q. 238. You figure sixty-some thousand feet at 120 feet?

A. Yes, sir; sixty thousand and over.

Q. 239. Taking it 240 feet, how many feet would have taken 240 feet in a minute?

A. Double, of course, 120,000.

Q. 240. Now, with the capacity of the canal below that, going down to the rock, how much fall would it have required to have drawn through that gate 175,000 feet in a minute, right at the gate?

A. I don't think that it would require more than $\frac{3}{10}$ of a foot fall to take through 175,000.

564 Q. 241. $\frac{3}{10}$ of a foot fall——

A. At the head-gate.

Q. 241 (continued).—in the 25 feet?

A. With the guard-lock 10 feet deep, and that width 50 feet in width.

Q. 242. $\frac{3}{10}$ of a foot fall you think it would have taken in 25 feet?

A. Yes, sir; probably; well, I think probably better change that. I should say put that a half a foot. I think it would require about half a foot fall, as a rough estimate.

Q. 243. In Mr. Cary's question that he has printed and taken your opinion upon here this morning, you were asked to state how much of the amount of water which could be taken through the canal, passed through the old guard-lock with the gates open, could be used for hydraulic purposes and not interfere with the navigation of the canal. What do you mean by interfering with the navigation of the canal?

A. To the extent I understood it that boats could not be passed while the mills were drawing the water.

Q. 244. Would it make any difference the quantity of water that was running in the canal? I mean by that, would the depth make any difference with the interference with navigation?

A. A great deal.

Q. 245. The boats move easier in a light draught of water as compared with a heavier draught with the same depth in the channel, provided the channel was deep enough for each

565 kind of boat?

A. They pass better through a large channel than through a more contracted channel.

Q. 246. I mean in respect to depth.

A. The depth allows them to pass with greater facility, as well as the width.

Q. 247. So that if this canal was built upon the rock, the upper part of it, and built half of the width of the canal out in the river,

how rapid a current would be admissible in the canal for boats drawing two feet of water?

A. With powerful boats they could pass, perhaps, with three, even four, feet per second velocity, with a large area of channel and small area of boat, and in that case it might be—they might pass without much injury to the use of water, except to retard the boats; but the boats are not generally powerful enough to stem such a current; therefore the practical use of the canal with much faster than two feet a second would be more difficult than would be allowed generally by the Government at least.

Q. 248. What depth of water did the Government determine to make here in the river?

A. Well, they have been aiming to get about six feet draught of late years at all points.

Q. 249. I am getting back to when the thing was started, when this layout was made.

A. Well, I couldn't say what the requirements of the charters were myself. I suppose that evidence can be put in, can it
566 not? But the miter sills were put down at various depths; some of them were, perhaps, five feet; some of them, perhaps, seven or eight feet, the miter sills of locks, and some of them were of such depth that they had to be taken out and lowered.

Q. 250. In what way?

A. To get the 6 feet draught of water over the mitre sills.

Q. 251. Now, originally at what depth were the mitre sills placed?

A. Well, I can't say; they varied in depth.

Q. 252. Did you ever see one of the original mitre sills?

A. Oh, yes; I suppose I have; I suppose I have seen a good share of them.

Q. 253. At what depth were any of them placed that you may have seen?

A. All the way from 5 to 8 or 9 feet.

Q. 254. Where was one 8 or 9 feet deep?

A. The lower mitre sill of the lower lock at Appleton, I should think, was 8 or 9 feet in depth.

Q. 255. From where?

A. From the surface, at common stage of low water.

Q. 256. The upper or lower mitre sill?

A. The lower mitre sill, below the surface of the water at fair low stage of water.

Q. 257. How far down was it in the rock?

A. Oh, it was on the rock, without they had broken down to get a good layer. They find it more convenient to do that than raise timber foundation, so they put the lock down deeper; put it
567 onto solid rock.

Q. 258. Isn't it true the solid rock isn't 9 feet down at the lower lock at Appleton?

A. I think it is at the lower lock; I think it is about 9 feet. They *they* must have broken out some. My impression is that that must have been about 9 feet over that lower mitre sill.

Hearing adjourned until Tuesday morning, February 7th, 1893, at the same place.

COMMISSIONER'S OFFICE, *Feb.* 7, 1893—10 a. m.

Parties appear as before, and Mr. Stevens for the parties in the caption named as being represented by him.

Cross-examination of NATHANIEL M. EDWARDS continued.

By Mr. MARINER:

At this point the witness N. M. Edwards states that he wishes to make a correction of figures on the map "Kaukauna Water Power Company's Exhibit 1," put in evidence upon the first taking of testimony, which map is now before him, and says: I find the heights of the dam in blue figures to be one foot and twenty-seven hundredths too high, as well as the water surface. At the northeasterly end of the dam there now, before correction, appears the following in blue ink: "$+ \overset{\text{crest}}{5.68}$;" over against it and above the dam the other letters, $+ \overset{\text{water}}{6.10}$. At the southerly end of the dam now appears upon the same map in blue ink the following: $+ \overset{\text{water}}{6.5}$ (+5.73). The witness now states that he wishes to correct the figures and his testimony as to the height of the dam. These figures should be reduced by 1 foot and 27-hundredths, all of them at both ends,

568 leaving them as I have now put them in red ink, $+ \overset{\text{crest}}{4.41}$, $+ \overset{\text{water}}{4.83}$; at south end of dam, $+ \overset{\text{crest}}{4.46}$, $+ \overset{\text{water}}{4.78}$.

Examined by Mr. ORDWAY:

Q. 259. What do those red figures as they are now put upon the map mean?

A. The height of the dam at the ends and the water as it stood when the survey was made upon the pond above the dam—above the stone foundation—above the top of stone foundation under brick store at northwest corner of block 2, plat of Kaukauna island, my bench.

Q. 260. That is your bench-mark all the way through, ain't it?

A. Yes, sir.

Q. 261. Read those figures to me so that I will understand them, not being a hydraulic engineer, "$\overset{\text{water}}{+ 4.78}$."

A. Higher than the bench.

Q. 262. What do the other figures mean, "+ 4.46," right under it at the south end of the dam—at the south end of the dam?

A. 4.46 feet above the bench.

Q. 263. Why the difference between the two red figures "+ 4.78" and the other red figures, "+ 4.46"?

A. Because the water was standing 32-hundredths on the dam at that point by leveling.

Q. 264. Were those measurements made at different dates?

A. No; those were made, I think, at the same date.

Q. 265. Then I don't understand the answer to my last question. Why the difference between the two sets of figures, "+ 4.78" and "+ 4.46," at the same point?

A. The water was falling over the dam about three inches
569 or so; three or four inches.

Q. 266. And the figures "+ 4.46" mean the actual surface of the top of the dam?

A. Yes, sir.

Q. 267. And the figures "+ 4.78" mean the surface of the water as it was then going over the dam?

A. In the pond just above the crest; up river from the crest.

Q. 268. Does the change of these figures which you have now put upon the map in red ink make any difference with the line of figures indicating surface of water running from the southerly end of the dam down to the upper end of Island No. 4?

A. They do not.

Q. 269. How did it happen that you discovered the error which you have just now corrected?

A. Well, you sent this copy of the map to me for some examination and some advice to inform you, and I happened to notice those heights and they didn't look right, and so I looked them up in my notes.

Q. 270. What did you look them up from?

A. From my various levels that I have made of the crest of the dam.

Q. 271. And from which you supposed you had made this map, "Ex. 1," correctly?

A. I think probably I did examine those also, as well as the other. I compared them with a number of surveys; in fact, I went down myself last week and went over the work so as to be sure.

570 Q. 272. Will those corrections make any practical difference with the determination of the question as to the proportions of water that should go into these respective channels north and south?

A. I don't think it will make any. I don't see that it will affect the case in the least, except, perhaps, mislead in some other information in regard to location.

Q. 273. You spoke of your bench-mark, in the testimony which you have heretofore given, as being at the top of the stone foundation of a certain store, which is described in the testimony, downstream from the dam. Did you make any mark on that stone locating the exact point of that bench-mark?

A. I don't recall ever making any mark on that foundation.

Q. 274. Is there a brick superstructure above that stone foundation?

A. There is now.

Q. 275. Does it come out flush with the stone foundation?

A. Yes; it comes out flush, and possibly projects a half an inch

or so—I should say the brick does—over the stone; perhaps nearly plumb with it.

Q. 276. Did you designate in any way which particular stone you took the top of as the bench-mark, so that you or anybody else could find it from that description, "the top of the stone foundation"?

A. I did not, but it is evidently on one stone; the only stone on the corner at the top. The stone isn't of very large size nor very regular. When I first took it I think it was before any brick
571 were laid, and therefore I kept up this bench because I had commenced that way, and I took in my notes in one place four inches east of the corner on that stone. There might have been a little knob of a quarter of an inch higher, possibly, the reason I took it that place. That is the only thing that I have made any note of any more than taking it at the corner of the stone foundation. I don't think there would be a quarter of an inch difference.

Q. 277. Just describe in a few words the operation of taking measurements from that bench, you standing at the bench. What do you do?

A. I put my rod upon the stone usually, or in cases since the brick-work was made I either sight under, to have the bottom of that rod the right hight, or have the man put a knife blade in and set it on the knife blade instead of on the stone.

Q. 278. Into what?

A. Into the mortar resting on top of the stone.

Q. 279. You mean slip the knife blade into the joint?

A. Yes, sir; touching the top of the stone.

Q. 280. On top of the stone, between that and the first brick?

A. Yes, sir; and then set the rod on the knife blade.

Q. 281. And then sight up or down on that rod?

A. To graduation on the rod.

Q. 282. A quarter of an inch would make a good deal of difference, wouldn't it, in the amount of water which would go one place or another with the location of that bench?

572 A. Well, in one survey it would vary all the section equally.

Q. 283. And not make much difference as between the different channels?

A. No, sir; it wouldn't make any difference, probably, because it was so far away that I had to carry my bench up and transfer it to some other point, from which I made both surveys—from a new point.

Q. 284. You mean you levelled up?

A. Levelled up. I don't think that there would be a quarter of an inch difference. That would be the excess of variation, in my judgment, and perhaps might be nearly double the error.

Mr. ORDWAY: The corrections made by the witness it is agreed may be copied onto the map, which is on file in court.

Cross-examination by Mr. MARINER resumed:

Q. 285. You spoke yesterday in your examination, in regard to the effect the velocity of water would have on the navigation of the stream, that a boat with good power would be affected to a certain extent. What kind of a boat did you have in mind?

A. Steamboat.

Q. 286. What size and draught?

A. Well, especially the larger boats would be affected the most. A smaller boat would be affected, of course, somewhat.

Q. 287. Well, but what sized boat and what draught did you have in mind—dimensions, I mean?

A. Well, probably it would refer more to the sized boats
573 that were adapted for the locks—nearly the dimensions of the locks.

Q. 288. Such boats as are in ordinary use there?

A. Such boats as are in ordinary use there.

Q. 289. Give the dimensions of boats as you had them in mind.

A. Well, from 20 to 26 feet wide and perhaps 100 to 140 feet long.

Q. 290. And draught?

A. 4 to 6 feet.

Q. 291. Would there be any difference in the action of the water upon a small boat and upon a large boat in a given current?

A. There would. A large boat would have a tendency to pile up the water in front and reduce the water in hight at its rear greater in proportion than a small cross-section—make it more difficult to climb the slope of water created.

Q. 292. In other words, you can run small boats in a comparatively smaller channel than you can a large boat, can you not?

A. In the same channel you can.

Q. 293. To get the same effect upon a small boat that you would upon a large boat you would have to vary the size of the channel—the cross-section of the channel?

A. You would.

Q. 294. A large boat in a small channel would require for successful navigation a very much slower current than a small boat would in the same channel, would it not?

A. It would.

574 Q. 295. Now, you have been here in the State engaged in hydraulic engineering for a good many years, have you not, Captain?

A. I have.

Q. 296. And you have been over the State considerably, have you not, looking into the condition of water powers and examining them?

A. I have.

Q. 297. So far as you know, was there any considerable use of water power in the State of Wisconsin in 1848 to 1852 or '3; and, if so, where was it?

A. When I came to the State in 1866 the greatest amount of

power used, the great bulk of power that was used, on the Fox river was at Neenah and Depere, and possibly $\frac{1}{16}$ of the water at Appleton, $\frac{1}{2}$ of the water of the river being used at Neenah and Menasha and possibly one-half at Depere; mostly in flour and lumber manufacturing. On the Wisconsin and Chippewa there was some saw-mills and flour mills. With the exception of that there was little power used in 1866.

Q. 298. You have overhauled or overlooked or looked over the powers that were being used before 1866, have you not?

A. Yes, sir.

Q. 299. What amount of horse-power was in use in any one mill that you ever looked over that was here in use prior to 1866?

A. On the Fox?

Q. 300. Anywhere in Wisconsin; the biggest one you know of in the State.

575 A. I don't know whether the Chippewa saw-mill was in use; that was in use either then or soon after and used, probably, a thousand-horse power. The mills at Neenah and Menasha used at an average, perhaps, one-hundred-horse power apiece, I should say, and largest, I judge, not more than 200-horse power.

Q. 301. Were any of those mills that you mention, either at Chippewa or at Neenah or Menasha, in operation as long ago as 1850?

A. I can't say; I think not.

Q. 302. Do you know of any place where water power was being used extensively in this State in 1850?

A. I don't think that there was a very great amount of power used in 1850 in the State; mostly isolated saw-mills; little saw-mills and flour mills.

Q. 303. From your observation of what was here as long ago as that, what was the condition of the science of hydraulics here in this State; what was the knowledge as displayed by the actual work which you have seen?

A. Very meagre.

Q. 304. When you go to examine an old water-power plant, dam, and races, can you generally tell from the outlook what the man intended; from his work, from what he has done, can you form an idea, generally?

A. Of course, you can form an idea; something of what he has obtained, as far as water power is concerned, actually.

Q. 305. You can see what he has accomplished?

A. Yes, sir.

Q. 306. And from that you can sometimes, if not always, gather his intention?

576 A. Yes, sir.

Q. 307. Now, from the layout, the situation of the dam and of the land and the canal, as you find them constructed there at Kaukauna, what would you understand the man who laid the work out intended to accomplish?

A. Intended to accomplish capacity enough for the boats running

through the locks and also for ten or a dozen water-power lots—to supply water for ten or a dozen water-power lots.

Q. 308. Where did he intend to use the water power?

A. Mostly within 10 or 12 hundred feet above the upper lock at Kaukauna—from the canal towards the south.

Q. 309. Taking this map that you testified in regard to yesterday ("Ex. Def't Kaukauna Water Power Company No. 3), between what points do you think he intended to use the water?

A. From the flour mill called Smith's flour mill to the lock.

Q. 310. Were there opening- for the use of the water there in that locality?

A. There was only one at the time I came, in 1866.

Q. 311. Had there not been openings put in there at some previous time?

A. No; nothing but that one. There was a flour mill in place of where the Kaukauna paper mill is.

Q. 312. Are you sure that there hadn't been when the embankment was made—bulkheads put in there originally?

A. I am very sure there was no other bulkhead ever put in before I came, in 1866, except for that flour mill in place of the Kaukauna paper mill.

577 Q. 313. You are familiar with the location there, of course?

A. I am.

Q. 314. And you know this platting that was made of the land from Smith's mill below into lots by the improvement company?

A. Yes, sir.

Q. 315. What is the capacity of the land there so platted into lots in regard to the use of the water? Is there land enough to use the whole water of the river?

A. There would be under present methods of using it.

Q. 316. Now, yesterday you spoke of the average stage of water in the river. What did you mean by that phrase?

A. Average low stage.

Q. 317. Well, the average low stage, perhaps you said.

A. I mean taking various years for, perhaps, eight months or so of the year, and take the common low water of that time. Perhaps it might vary for a few days during that time and be a little in excess by some method of flooding or use or it might be shut off. I wouldn't take that into account if shut off from the Neenah mills; but the usual low for a number of years and take the average of those years for the low water. Now, in some years we have it as low for months—not but about 120 to 130 thousand cubic feet. Then there are other years that we will have about 200 thousand for a number of months during the low stage of the water, and it will be pretty uniform in the way it is fed to us from Neenah. The average of those would be what I would call average low water. The

578 average would be less in case it was not for the Neenah and Menasha dams, for the reason that the freshets would run off greater in the spring and we would get no addition from the storage of low water in Lake Winnebago, which now supplements our low water from the natural flow from the rivers above Lake Win-

nebago. They are constantly drawing usually on the volume in the lake as well as upon the natural flow, so we get a greater average from those improvements.

Q. 318. You say they are constantly drawing. You mean in low water.

A. In low water.

Q. 319. Now, you say take the average of eight months. Why don't you take the average of the whole year?

A. Because there is a volume that is excessive on account of heavy rains and melting snow, and that has been in the past mostly in excess of what could be used by the mills and reckoned of very little value in the past.

Q. 320. Why was it in excess of what could be used by the mills? Because there weren't mills enough to use it or what?

A. That was the main reason, because there weren't mills enough to use it and capacity enough for the use of it in the canals.

Q. 321. What is the difference between that excessive flow of water and what you call an ordinary low-water flow?

A. Amount to, say, from 100,000 cubic feet per minute up to 8 or 9 hundred thousand cubic feet a minute.

Q. 322. It gets to a point sometimes when it threatens everything there in the valley, does it not?

A. It does.

579 Q. 323. Of what practical value is such a flow as that to use?

A. It might be partially made valuable for certain branches of business and not for the most branches.

Q. 324. You say might partially be made valuable. Do you mean by that that it could be made profitable or that it could be used so as to turn wheels?

A. It would be difficult to use the whole of it in an extreme freshet, but the 1 or 2 or 3 hundred thousand cubic feet or so could be made, under the present methods of making pulp—could be much better employed than formerly for other branches of business, and could be made use of possibly from three to four months in the year.

Q. 325. How much could be used three to four months in the year in excess of what you call the average low-water flow?

A. I should say probably 200,000 or possibly 300,000 for a time of three months, and for a time of three or four weeks possibly a good deal more than that if they had room to crowd in mills; but I don't think capital would for a long time yet economize that for the reason that it would be more profitable on other streams to do the same work continuously instead of a month or two or three.

Q. 326. The parties have improved the river so as to use at least all of what you call the average low-water flow, have they not?

A. Yes, sir; and in a good share of the dams that are improved upon now, and some of them have capacity to use in excess
580 of the low-water flow, for years of high-water flow, and also for the three or four months that have an excess as well.

Q. 327. In some places they have put in steam power, have they not, to supplement their——

A. They have.

Q. 328. Is there a demand at several of the dams there for additional water; more than there is?

A. In the machinery? There is, in the amount of machinery they have put in, a demand for a greater amount of water than they can get at ordinary low flow.

Q. 329. The owners on a number of those dams are looking around for other places to put up mills to manufacture with, are they not?

A. They are, and to supply pulp for their mills already erected.

Q. 330. And they don't undertake to utilize this extra flow that you think would be valuable by putting up other mills to use it?

A. They have to a certain extent put a surplus of wheels in to be used a few months in the year, but not to a very great extent as yet.

Q. 331. They prefer to go off to other dams or other places to locate their mills to answer their necessities, do they not?

A. They do generally, except it may be that they add a certain amount to their capacity above the low-water flow, to the extent of perhaps fifty per cent. of their power to use.

Q. 332. Or, you mean, capacity to use?

A. They add that capacity to their low-water flow, possibly
581 in some cases fifty per cent., so that they get fifty per cent. more power in case of high water, but it is not very general. A few manufacturers have done it.

Q. 333. It is proven in this case that Mr. Martin, who constructed this work of improvement here at the upper dam at Kaukauna down to the first lock, undertook, in writing, under a penalty, to construct this canal large enough to carry the whole volume of the river. Now, judging from the work as it is there and from the general condition of the science at that time here, do you suppose that he intended in good faith by this work to carry out that undertaking?

A. I should suppose that he did, and that the parties interested knew so little in regard to water powers that they would be likely to accept it at that time as being sufficient, possibly.

Q. 334. It was of a capacity to do more work than was done anywhere at that time in the State, as you know from observation you have made, was it not?

A. I think it was as capacious a canal, perhaps, as was constructed for water-power purposes in the State.

Q. 335. Wasn't it probably a great deal more? Isn't it a great deal larger than any canal that has been constructed for that purpose, that had been at that time constructed for that purpose, that has come under your observation in this State?

A. Well, there is one place where they have actually produced a better condition and probably was done about the same time,
582 and that was at the upper dam at Appleton, on the south side; the wing dam to the main dam; the upper dam at

Appleton; actually created a very good power; better power for using half the river than this at that time.

Q. 336. What do you mean by the wing dam?

A. Now occupied by the Government stone dam—stone pier. That was a better constructed piece of work than this for the use of the whole water of the river.

Q. 337. That was where they took the water right out of the pond—of the body of the pond—or where the design or the plan was to take the water right out of the body of the pond and empty it right into the river?

A. Yes, sir.

Q. 338. At this site that is not practicable, is it?

A. Not to get what head they were trying to get, evidently.

Q. 339. I mean taking the condition of things in this State at that time. There ain't any land here, is there, anywhere along between the dam and the Smith mill where you could locate mills?

A. Well, by encroaching considerably more upon the river and enlarging the lower part of the canal it could have been done.

Q. 340. I am not saying it couldn't be done now; but I am taking the state of the country at the time.

A. I rather think not so much for that reason as for the ignorance of Mr. Martin in regard to water-power questions. I think that was the main reason that they didn't build it larger, rather than that there wasn't room to do it in.

Q. 341. I am not talking about building it larger. Is there
583 any place to use the power, after they have built the canal, until you get below Smith's mill?

A. A very contracted place. Possibly it could be used under a less head along opposite the walls by a small establishment.

Q. 342. What did anybody want to use power for here in those days?

A. At that time it would hardly be practical for the amount of work they were doing, and they probably wouldn't want to have established themselves above the Smith mill.

Q. 343. Grist-mills and saw-mills were the only demand for water power; had been up to that time in this State, were they not?

A. Mostly; mainly.

Q. 344. Would there have been any access to a grist-mill or saw-mill above the Smith mill?

A. Not without it was constructed to the same.

Q. 345. There would have to have been a bridge in the river, wouldn't there?

A. Yes, sir; there would.

Q. 346. You wouldn't have regarded that as practical, would you—at the time, I mean?

A. No; I think not. With the unused lots that were laid out, I should hardly consider it practical.

Q. 347. There was no railroad.

A. No railroad accessible to the water power.

Q. 348. No means of communication to and from mills except teams and the river?

584 A. No, sir.

Q. 349. While laying out the water-power lots where they did they were accessible to all the appliances and all the ways of access that people had at that time?

A. Yes, sir.

Q. 350. Mr. Ordway asked you yesterday, before you made the survey of the river, what you estimated to be the relative flow of water in the north, middle, and south channels of the river, and when you answered the question he interrupted you and didn't let you complete your answer. What were you going to add to that?

Q. 350 waived.

Q. 351. When you come to make a measurement of the cross-section of the north, south, and middle channels of the river, did the measurements agree with your preconceived idea of the quantity of water flowing in those several channels?

A. No; not exactly.

Q. 352. What was the difference?

A. I found in studying the cross-sections and the rapidity of the current that would be due to the slope that it fell short of that, and I come to the conclusion that about $\frac{1}{5}$ would be nearer than $\frac{1}{4}$. Of course, it is a nice question without actual test on the ground itself to determine. I experimented a little by the velocities on that kind of bottom, of rock bottom, and broken rock and gravel, and by taking the velocities as near as I could judge from observing what books gave as a formula for working out, I come to the conclusion that there was going to be about $\frac{1}{5}$ of the whole flow of the river

585 that would go into the south channel, and assuming the water to be about the average low water.

Q. 353. Did you take the velocities of the water in making those measurements by actual experiment?

A. I tried the velocities at some different depths over that rock and certain places where I had been levelling and knew about the slope; took the surface measurement; I didn't take the bottom; and then I assumed the average from common rules of getting the average flow where the surface flow was such and such at about that depth and from my judgment and observation of other currents in shallow water.

Q. 354. Did you make any allowance for the projection or erection of the canal bank in the stream?

A. I did not.

Q. 355. So that your calculations are based upon the river as it is now?

A. The river as it is now.

Q. 356. A part of the bed of the stream being occupied by the bank of the canal?

A. Yes; but I judged—I kind of balanced the loss of cross-section in width by taking out that rock for building the pier. That occurred to me, that question, and I recollect of making some figures upon the amount of stone in the walls at the time, and concluded to balance the amount that was taken out by the canal out

of the width with what had been taken out of the bed. That is not saying anything about the other conditions.

Examined by Mr. HOOPER:

586 Q. 357. Do you know who the engineer of the board of public works was when this plan of improvement was laid out?

A. I do not.

Q. 358. Do you know anything about the reputation of C. R. Alten as an engineer?

A. Not very definitely.

Q. 359. Do you know where he came from, what experience he had had?

A. I have understood, I think, he has been on the Erie canal, on the construction, and that is about all.

Q. 360. Do you know as a matter of history whether the board of public works called in another engineer to review the plans after they had been made?

A. Not to the fact. I have seen there have been a number of names of engineers employed. I haven't studied the matter to know much about them.

Q. 361. You say you judged that the party who planned the works at Kaukauna proposed not only to make navigation but a water power?

A. Yes, sir.

Q. 362. From what do you judge that?

A. From the Jenne maps and from the securing of the land at the highest part of the fall from the canal.

Q. 363. What about the Jenne maps makes you think that?

A. That water-power lots have been laid out 50 or 100 feet wide.

Q. 364. You say that you judged that they intended to have 10 or 12 water-power lots. Why do you judge 10 or 12?

587 A. I think there were about a dozen lots fronting on the canal.

Q. 365. Counting them up on the map?

A. Yes, sir.

Q. 366. As water was then used and with the industries then common in that vicinity, what amount of water would 10 or 12 mills take on the average?

A. Probably 10 to 12 hundred horse power, the kind of mills that were being built.

Q. 367. What part of the flow of the river would it take to furnish 10 or 12 hundred horse power on those lots?

A. About possibly $\frac{1}{4}$.

Q. 368. You say it was evidently intended to use that water between the bridge and the lock?

A. Yes, sir.

Q. 368½. Is there anything to indicate that more was to be used upon one part than upon the other part of that distance—that is, that more was intended to be used upon the lower lots than upon the upper or upon the upper than upon the lower?

A. Nothing more than that there would be a greater head from the canal to the river at the lower end.

Q. 369. For that reason would it require more or less cubic feet of water there?

A. Less cubic feet.

Q. 370. You say you suppose Martin intended to make a canal large enough to take the whole water of the river. Did you say that, or did you intend to say that?

A. I may have said that I supposed he might have intended.

588 Q. 371. Did you say or did you intend to say that?

A. Well, I would like to know what I did say.

(Question and answer relating to the above read.)

Q. 372. Without any such contract would you suppose that the work was intended to carry the whole volume of the river?

A. No; I should say not.

Q. 373. Now, taking into account the science of hydraulics as it was here at that time and the fact, if it was one, that two engineers had been on this work, looking over this plan, who had had connection with the Erie canal, and leaving out of consideration any writings or contracts, (what proportion of the water) would you suppose that it was the intention of the builders of that canal to carry through it?

A. I should say $\frac{1}{2}$, about.

Q. 374. Is there any greater practical difficulty in using the water at Kaukauna between the dam and the upper flouring mill than there is in using the water from the dam down to the first lock at Appleton—at the upper dam? Are they not practically the same?

A. I should say not.

Q. 375. What is the difference?

A. At Appleton the river is broader and will allow, without disturbing the property upon the sides, a contraction of the river to the extent of 100-foot lots, we will say, outside of the pier, without very greatly changing the conditions of things upon the borders of the rapids, while at Kaukauna your taking 100 feet for the depth of lots outside of the wall would take the deeper part of the

589 channey—take from the deeper part of the channel—and where it is so narrow would unduly contract the channel and do damage to island and other property.

Q. 376. The question of access to the mills would be practically the same, wouldn't it?

A. It could be made so, practically the same. Well, no; it couldn't as well, because at Appleton there was greater width usable, and being able to be made outside of the lock and above the lock from the river and below the lock at Appleton there was good access by hard land.

Q. 377. I am not talking about below the lock. I am simply talking about above the lock.

A. Well, it was more accessible at Appleton from below to those lots than it would be at Kaukauna.

Q. 378. In both cases the opening to take water from the river was made by carrying up a wing wall in the bed of the river?

A. Yes, sir.

Q. 379. At Appleton there were openings made in the wall for the taking of water for the use of mills?

A. Yes, sir.

Q. 380. Mills located to take that water through that wall must have been located in the bed of the river, mustn't they, entirely?

A. Yes, sir; or part of the mill could have been placed upon the wall, perhaps.

Q. 381. Part of the mill could have been placed upon the wall at Kaukauna, couldn't it, just the same?

A. Yes, sir.

590 Q. 382. The difference is in the degree of facility?

A. And there is another difference. At Kaukauna there is a great deal more loss of head in proportion than at Appelton by going up the stream.

Examined by Mr. CARY:

Q. 383. If your calculations to determine the amount of water due to the different channels in the river I understand you to have taken an average low stage of water as the basis of calculation?

A. Yes, sir.

Q. 384. In arriving at an average low stage of water I understand you to have taken the low stage for about eight months of each year during several years and averaging that low stage during those years for those months?

A. That would be the method; yes, sir.

Q. 385. I further understood you to say that the flow of the *of the* river for three or four months of each of those years not taken into the average would exceed the flow during the eight months taken in each year of about three hundred thousand feet?

A. No; I should, from rough estimate, say from one to possibly two or three; it might go as high.

Q. 386. Did you not say from two to three hundred thousand feet in your answer?

—. Well, I think three would be large, and two would perhaps be nearer; but I think it would go pretty near 200,000 most any year for three months.

Q. 387. And you also said that for the other month of the
591 four not taken into the average in each year that the excess of flowage would be much greater than that even?

A. Yes, sir.

Q. 388. The amount of water carried by the south channel would increase very largely, would it not, as the stage of water in the river increases?

A. It would.

Q. 389. That is, the south channel would carry a larger proportion to the other channels in a high stage than in a low stage?

A. Yes, sir.

Q. 390. What would be that increase in the proportion of the south channel over the other channels according to the increase in the stage of water?

A. I should say in a high freshet there might be nearly ⅓ of the river go down through the south channel in a state of nature.

Q. 391. Couldn't more of this excess of water, so to speak, in the south channel be used in that channel than in the other channels?

A. It could be used with a little greater ease, I think, but probably with works adapted for the whole, for making pulp, possibly. The whole might be used with a great deal of economy of space and work, but it would be hardly practicable.

Q. 392. It being a smaller channel, couldn't the excess of water arising from a higher stage be used with more economy in the south channel than in the north channel?

A. I think perhaps it could be; yes, sir.

592 Q. 393. Then should you not, in fairly estimating the amount of water due to the south channel of the river, take into account the greater proportion of water flowing through that channel in a high stage than would in an average low stage?

A. Not upon the present values of water power, I should say; but it might be necessary to put it in in a really fair estimate at a certain value.

Q. 394. What was the principal thing for which the canal was constructed at Kaukauna?

A. I suppose the water navigation—improvement of river navigation.

By Mr. ORDWAY:

Q. 395. You answered yesterday Mr. Mariner's question substantially as follows: That from the head of the canal down to the bend, which I suppose means near the red mill, probably half the canal laid in the river. Have you any personal knowledge as to how far out into the river the retaining wall was located at the head of the canal right over against the old guard-lock and between the guard-lock and the river?

A. I have not.

Q. 396. Have you any idea that any considerable portion of the canal at that point over against the old guard-lock lay in the river?

A. I have no knowledge personally in regard to it.

Q. 397. So that when you answered generally that from the head of the canal down to the bend probably half the canal lay in the river it was from general hearsay undenied and the testi-

593 mony of many of the witnesses in this case which you have heard?

A. That is mainly the reason that I formed that opinion, and the soundings. I have sounded the canal. Of course, I don't know how much may have been taken from the side banks. I have no real knowledge in regard to the matter myself personally.

Q. 398. In 1851 and from thence to 1853, when the Fox & Wisconsin Improvement Company was organized under an act of the

legislature, who had the principal management of the improvement?

A. I am not posted.

Q. 399. The canal was constructed, was it not, between 1851 and the fall of 1854, as a matter of history?

A. Mainly as a matter of history I understand so.

Q. 400. At Kaukauna?

A. Mainly.

Q. 401. How do you know, then, that the old canal so constructed under Martin's contract was constructed both for hydraulic purposes and for the purposes of navigation?

A. I do not, except from circumstantial evidence.

Q. 402. And hearsay.

A. Well, yes; I suppose hearsay.

Q. 403. What circumstantial evidence do you refer to?

A. Well, the fact that the surveys and plans in the office laid out water-power lots and the company provided the land for power purposes, to appearance.

Q. 404. Now, isn't it the fact that the plans and maps which you refer to in the company's office were not made until 1858
594 and the maps completed from surveys in 1859?

A. That is what I understand.

Q. 405. Doesn't it so appear in the records of the office?

A. Yes, sir; I think it does.

Q. 406. Now, I get back to the other question. What leads you to think that *in* the original contract made with Mr. Martin in 1851 contemplated a canal both for the purposes of navigation and hydraulic use?

A. Probably from the fact that charters were got for hydraulic purposes as well as canal purposes, and also that they seem to have bought land while they were building the canal in locations that they could use for water power.

Q. 407. If it is a fact that the State never bought any land at Kaukauna for such purposes, then that reason would not apply, would it, so far as the State is concerned?

A. No; I suppose not.

Q. 408. Now, if it is a fact that the Fox & Wisconsin Improvement Company never bought any land at Kaukauna for the purpose of accommodating the location of establishments driven by hydraulic power until in the summer of 1855, then that reason would not apply prior to 1855, would it?

A. I suppose not.

Q. 409. Now, it is a fact, proved in this case by the records, and never has been denied, that the first property bought at Kaukauna by the Fox & Wisconsin Improvement Company adjoining this line of canal was of Mr. Law; also a deed from Mr. Meade in August and September, 1855; copies of which deeds are already in
595 evidence in this case. Do you know of your own knowledge whether the board of public works or the State ever made a lease of any water for hydraulic purposes from this canal at Kaukauna?

A. I do not.

Q. 410. Do you know whether the Fox & Wisconsin Improvement Company ever made a lease of any water from this canal for hydraulic purposes?

A. One or the other must have done it.

Q. 411. How do you know that?

A. Because I came when the canal company was formed, and I suppose the Fox & Wisconsin Company existed up to that time nearly or about the first of June, when I came, 1866, and a number had been leased at that time.

Q. 412. Now, if it is a fact that the Green Bay & Mississippi Canal Company did not come into existence until August, 1866, and that that company never made a lease of water power prior to that time, by whom could water have been leased for hydraulic purposes upon that canal prior to August, 1866?

A. Well, that, I suppose, is subject to written evidence, and I couldn't say which company or whether the State leased.

Q. 413. Do you know the fact that in '1856 under an act of the legislature this improvement, including this canal at Kaukauna, was placed by the legislature and a vote of the Fox & Wisconsin Improvement Company in the hands of trustees under a large trust mortgage? Butler, I think, and Mitchell, I think, were two of the trustees. Do you know that fact from reputation?

596 A. I knew that the trustees existed for some years about that time.

Q. 414. Now, what lease did you ever hear of having been made of water for hydraulic purposes on that canal prior to the organization of the canal company in 1866?

A. I don't know who made them, but there were evidently leases at Appleton——

Q. 415. No; at Kaukauna, now.

A. At Kaukauna, a lease only to one company, I know; one party; one concern.

Q. 416. Wasn't it Cord & Gray?

A. I guess that was the original party for a flour mill.

Q. 417. If it should turn out that that lease to Cord & Gray was made in 1862 by the trustees mentioned, and also by Morgan L. Martin, and that that was the first lease of water power ever made upon that canal, would any of the reasons which you have given for supposing the canal was made for hydraulic purposes as well as navigation purposes apply?

A. I don't know that I have any basis, then, for that reasoning on those grounds, except some common sense.

Q. 418. Would maps made in 1858–'9 by the trustees in possession, supposing the maps to show by different colors upon the face that the people that made them at that time supposed there was going to be some property used for hydraulic purposes—would they have any tendency to show what the State intended prior to 1853 in that respect?

A. I should think it would show that there was some tradition

or something, for the reason I should hardly think they would take the responsibility.

597 Recess until 2.30 p. m.

2 P. M.

NATHANIEL M. EDWARDS examined by Mr. Ordway:

Q. 419. Would the error which you corrected at each end of the Government dam on map Ex. 1 this forenoon affect the water surface below the dam, as shown on that map by the line of blue figures extending down to and below the head of Island No. 4?

A. No; it would not.

Q. 420. By the correction you have lowered the head of water at the dam from six feet and $\frac{6}{100}$ to five feet and some one-hundredths. Why wouldn't that carry down with it proportionately all that line of blue figures indicating the surface of the water below the dam?

A. Because by some means or other there was an error made in putting those figures onto the end of the dam. I don't know how it happened; and they would not check with the notes, while the others would.

Q. 421. Now, are you sure that the measurements from your bench, made at the time that map was made in 1886, Def'ts' Ex. 1, were made at that time? Are you quite sure they were made in 1886 instead of being taken from measurements which were made in 1882, the same as you made up the map Ex. A, for Mr. Hooper, the plaintiff?

A. Yes; I am sure they were made at a different time from 1882, and I think somewhere in 1886 or 1887.

Q. 422. That is the time—whatever time is stated in the
598 testimony?

A. Yes, sir.

Q. 423. Did you personally make those measurements?

A. Yes, sir.

Q. 424. By request at that time?

A. Yes; I made them.

Q. 425. So that those measurements from the bench-mark down, on Ex. A, showing the surface of the water and the descent in it from the southerly end of the dam down to and below the head of Island No. 4, were made without reference to any height of dam or course of dam or water at the dam at that time, in 1886?

A. Yes, sir; above the dam.

Q. 426. They were made without reference to the figures which appear on Ex. 1 at the dam?

A. Yes, sir.

Q. 427. At each end of the dam?

A. They were probably made at the same time, as I intended to have the right figures on top of the dam, but I got an error of computation of the levels in on that height of the dam and the water making it so much too high—one and $\frac{27}{100}$ feet too high.

Q. 428. If the same error crept into the measurements shown by cross-section J I U on map Exhibit A, wouldn't that show the water

in our channel altogether too shallow and give us just that much less amount of water?

A. That couldn't affect those originally, because that map was made years before these last levels were taken. That of 1882 the map was made and the figures all computed.

599 Q. 429. You mean the map Exhibit A?

A. Yes; the survey of 1882; and that couldn't have changed them, because this was a very much later survey, and even if it should have they would show relatively right with each other, even if there was an error from the bench-mark up, because I only made one connection with the bench-mark for all the surveys, and made the surveys from the head of the island, with the same data to use for the level across the whole river. The way we took that we didn't take it by soundings; we took it by levels; had two men with heavy iron bars go into the river and wade across, holding a levelling rod.

Q. 430. In what year?

A. 1882.

Q. 431. At the time the map Exhibit A was made?

A. Yes, sir.

Q. 431½. That is to say, Exhibit A was made since this suit was commenced from soundings and measurements taken in 1882 by you, the minutes of which you kept in your office?

A. Yes, sir.

Cross-examination.

By Mr. GREEN:

Q. 432. Mr. Edwards, is there any reason why the water power created by the Government dam at Kaukauna could not be used by the Green Bay & Mississippi Canal Company at or near the south end of the dam, if they owned the land at that point?

A. No; there would not, if they could acquire the land.

Q. 433. If they owned the land at that end of the dam, they could use the whole water power created by the dam within what distance below the south end of the dam, about?

600 A. Oh, it possibly could be done in three or four hundred feet, I suppose, and with paper mills and pulp mills in connection might require five or six hundred feet.

Q. 434. Now, passing to the north end of the dam, does not the reason why the water power created by the dam could not be used between the north end of the dam and Smith's flouring mill resolve itself into a reason of expense merely?

A. It would, virtually.

Q. 435. If the Green Bay & Mississippi Canal Company had no other land on which they could utilize the water power the difficulty would not be insuperable, would it, in using it?

A. It would not.

Q. 436. Between the north end of the dam and the Smith flouring mill?

A. It would not; the channel could be deepened outside of the mills.

Q. 437. What part of the whole flow of the river at Kaukauna is required to be used through the Government canal as it is now constructed and used for the purpose of navigation only?

A. I should say the requirements for leakage and lockage of boats, which would amount to—well, to the excess of ten lockages a day, we will say. At present that would be excessive. I should say from five or six hundred for lockages and possibly enough to make eight hundred or a thousand cubic feet per minute during the 24 hours would cover it. Eight hundred to a thousand would cover the lockage and the boat requirements.

Q. 438. Please look at the map which I now show you,
601 marked Plaintiffs' Exhibit A 1. Does that map correctly represent what it purports on its face to represent?

A. Well, the map is correct.

Q. 439. Your answer to that question is yes, then?

A. Yes, sir; and the coloring is intended to be south of the north channel so far as my knowledge goes of the titles, and I am pretty familiar with the titles.

By Mr. GREEN: We offer the map in evidence.

By Mr. ORDWAY:

Q. 440. Which canal was it that you were testifying to in answer to Mr. Mariner's question this forenoon, and summed up by saying that it would carry about half the water of the river?

A. The Government canal shown upon map Exhibit 3, put in evidence by defendant Kaukauna Water Power Company.

By Mr. CARY: When was this taken?

A. About November, 1892.

Q. 441. Your measurements?

A. Yes, sir.

Recross-examination by Mr. GREEN:

Q. 442. Can you express in horse-power the quantity of water required for navigation under a sixteen-foot head in the Kaukauna canal?

A. About 33-horse power theoretically.

Q. 443. What is the whole available water power created by the fall from the upper to the lower end of the Kaukauna
602 rapids?

A. Assuming the average low water at 160,000 cubic feet a minute and the fall of the rapids 51 feet, which is by levelling very near correct, I find 15,450-horse power; constant horse-power during 24 hours, theoretical.

By Mr. STEVENS:

Q. 443½. How much horse-power per foot is your estimate?

A. Just about 300.

Mr. STEVENS:

Q. 444. And based on the flow of how many cubic feet a minute?
A. 160,000. Probably it would exceed that a little—the average.

By Mr. GREEN:

Q. 444½. How much of that is required for the use of the canal for navigation?
A. Well, 105, outside figures. Probably it would go less rather than over.
Q. 445. How long does the season of navigation continue there?
A. About seven months, I think, usually.

Examined by Mr. MARINER:

Q. 446. Assuming as a fact that there was an intention on the part of whoever constructed this work of improvement here, shown on Exhibit 3, to take to its own use the water power created thereby, and assuming the state of the science of hydraulics here as you have stated it, would you still infer, after this cross-examination that you have been exposed to, that the party who constructed the work intended to construct this canal large enough to carry the whole surplus flow of the river? I mean the honest intention, not
603 the intelligent intention.

A. Well, there is one reason made me think that the first guard lock would exclude that, because most any imperfect engineer in his knowledge about water power would know that that was hardly sufficient, I think, from what I think that guard-lock was originally. Although I don't know the depth, still I have reason to think it was not very deep and only 50½ feet in width; but I can easily conceive how a man pretty well informed about contract work and perhaps canals might not judge but that that canal could carry about the whole volume of the river, and it might carry about the whole volume of the river without that guard-lock under a fall of a foot to 18 inches on a part of the canal.

By Mr. ORDWAY:

Q. 447. In how many feet of the canal?
A. Perhaps a thousand feet of the canal, or a little more, down to the first mill; and still that might not have been the case on account of some deepening that has been done by dredge-work n the bend. I think there would have been an obstruction. Whe that earth came in by erosion and deposit I cannot safely say. rt of it probably did; but evidently the canal was not suitable for the whole river flow without a great loss of power—loss of head.
Q. 448. How much would it have increased the capacity of that canal to carry water to have set the wall and bank 75 feet further in the river?
A. It would have about doubled the capacity, I think.

Q. 449. Wouldn't it carry a great deal more than that, con-
604 sidering that that 75 feet would all of it be clear down onto the solid rock—the bed of the river—unless you took pains to fill it up?

A. I think that in that case it would have added especially to the upper part of the canal, so as to make it more than double the present capacity, but not after you get down to about the flouring mill.

Q. 450. Why not at the flouring mill?

A. Because there it was all excavation in the bottom, and if they had gone no deeper they wouldn't have enlarged the capacity more than about double.

Q. 451. Isn't the bottom of the canal very near the rock, down below the flouring mill?

A. The rock is higher under the canal than it is in the river, considerably, but still I think there are a few feet of dirt still on top of the rock from the flouring mill to the canal.

Q. 452. How much would the capacity of the canal have been increased between the Smith mill and the first lot by widening it 75 feet?

A. I judge that that would have widened virtually the depth of the deposit; part of the canal therefore would have been solid addition of the depth, simply by the 75, and therefore nearly double the capacity of the canal.

Q. 455. How much would it have increased the cost of the canal, when it was constructed, to have constructed it in that way?

A. The upper half, I should say, very little; perhaps not
605 more than ten or fifteen per cent. The lower part might have cost thirty per cent. more, I should judge.

Q. 456. Would it have cost ten per cent. more throughout the whole extent?

A. I should think probably ten to fifteen per cent. more. No; not more than ten per cent. I don't believe it would.

By Mr. STEVENS:

Q. 457. Just give your reasons. You have stated above it would cost thirty per cent. from the mill down. Explain that now.

A. Well, the greater part of the cost would be on the upper part, and by giving and taking from the excavation below the wall it would be a little cheaper than it would to move the bank outwardly entirely, and I think that probably ten per cent. of the cost would have made the improvement 75 feet wider, with equal depth.

Q. 458. Is there any other place around the improvement where the surplus water of the river could be used as readily and to as much advantage as upon the lots between the Smith mill and the upper lock on Exhibit 3?

A. I think not, on the north side of the river.

Q. 459. About what was the cost of the construction of the bank from the cross-dam down to the lot?

A. I should say about $18,000.

Q. 460. Is there any improvement intended to use the water from this pond on the south side at present?

A. There is.

Q. 461. That is shown on the map Exhibit A 1, is it not?

A. It is.

606 Q. 462. Do you know the cost of that improvement?

A. I don't know what it cost.

Q. 463. Haven't you ever heard it stated by the Kaukauna Water Power people?

A. I have only heard rumors about the cost.

Q. 464. About what?

A. Well, there is a good many things that are counted in the canal that were not necessary for just a simple water power, and look to the erection of mills, I think; also to the city improvement—culverts and the like, expensive head-gates, very permanent works—and it cost $150,000 or $200,000 I have heard. That includes looking to mills; some improvements for the future.

Q. 465. What are dimensions of that canal?

A. I couldn't give them definitely.

Q. 466. Well, as nearly as you can.

A. It is about 200 feet wide at the upper end and a little over 100 at the lower end, and my impression is that on a fair low stage of water the water would run from 8 to 10 feet deep; 8 or 9 the main part of the canal, and along to the lower end 10 or possibly 11 feet deep.

Q. 467. You have suggested a doubt as to whether the guard-lock was of sufficient capacity. Do you understand that that guard-lock was constructed with the idea of closing it except in emergencies?

A. No; only for emergencies; but the cross-sectional area, I think, was too small for even the capacity of the canal that
607 I have given.

Q. 468. Isn't that rather due, probably, to an insufficient idea of what the size of the canal and the size of such an opening ought to be than from any lack of intention to draw the water of the river through the canal?

A. I think it was in case they expected to use very much water power there.

Q. 469. We are assuming for all this examination that the parties building the improvement intended to take their water power to their own use.

A. I should say it was the want of judgment in capacity, in giving proper capacity.

Q. 470. Do you understand that either the State or the canal company or the improvement company have ever had any land on the south side of the river beyond the dam land and the right to build a dam across the Hunt island?

A. I never have known of their having any there at Kaukauna except that right.

Q. 471. Before you made these measurements had the Government rebuilt the dam at Kaukauna?

A. They had.

Q. 472. And in rebuilding that, as I understand you, they turned the whole current of the river through the south channel for a time?

A. They did not turn the water down in the south channel.

Q. 473. In answer to Mr. Ordway's question you said that your testimony had been confined to the canal shown on this map.
608 Hasn't this been the canal always from the beginning?

A. It has, with the exception of the Government guard-lock here; has been put in within a year and a half or so and the old head guard-lock taken out from the beginning and some little dredging done around the bend here, possibly widening a little at the bridge and below. Otherwise it has been about the same since I have known it.

Q. 474. When was the guard-lock dredged out?

A. Well, I couldn't say as to that.

Q. 475. Before you came there?

A. My impression is I don't recollect of ever seeing the original guard-lock.

Q. 476. Has not considerably more than the 20 feet that the State or the improvement company originally owned on the land side of the bank, which they called the tow-path, slid off into the canal?

A. From evidence of sliding I should say that it had slid quite a little. Probably 8 or 10 feet, I should say, the foot of that bank must have moved, from the indications of the slope. I couldn't say but what it had been more than that, and I can't say when it was done mainly, although I have known some little slips since within ten or fifteen years, but not very extensive; perhaps a foot or two.

Q. 477. You have given us what you call average low water. Is there any time when the flow of the river is below that?

A. There is.

Q. 478. How much below?

A. I think as low as about 120,000 cubic feet a minute.

609 Q. 479. Doesn't it ever go below 120,000 cubic feet a minute—the flow of the river?

A. I think I have never known it, except it might be possibly Sundays or when there was anchor ice or obstruction by freezing—very great obstruction—or Monday morning. It reaches sometimes into Monday; a want of water in that respect on account of Sunday.

Q. 480. What is the relative value of the water for hydraulic purposes at times of high and low water?

A. At high water it has been of comparatively little value, until now they have got an excess of pulp mills in some places of the capacity of low water, and so they use some of the high water. It is, of course, intermittent—that is, only two or three or four months in the year—and therefore at the present time it has not proportional value anywhere near of the steady water.

Q. 481. Well, how is it at extreme low water?

A. Well, it is a great deal more valuable than at medium water.

Q. 482. How would the fact be in regard to determining the valuable flow of the river? Is the flow of the river worth more in times of low water, such as it is, than the whole flow of the river in times of extreme high water in its marketable merchantable value?

A. It is a great deal more per horse-power, but in high water, there being a sufficient water flow, everything is running full

capacity, and, of course, more valuable in extreme low water.
610 The whole flow of the river is then more valuable than a want of flow because it keeps all industries moving, and with a want of water—partial power—they have to partially stop; but the demand would be very much greater in low water, and the price paid per horse-power in low water would be very much greater than at the average water if purchasable. I have known cases where they have paid very high for having certain mills shut up in very low water.

Q. 483. You said that the south channel in times of high water, you thought, carried more than one-fifth of the flow of the river; you thought sometimes it reached nearly one-third. Why is not the north channel affected in the same proportion as the south channel?

A. The south channel is broad and in the ratio, perhaps, of not quite one-half of the whole river. That is nearly as wide as the north channel; perhaps two-fifths of the combined width of both channels, and a little more that two-fifths, and the main channel less than three-fifths—the north channel. So that when you come to add an equal depth to the top of each you get a greater cross-section proportionately on the south channel than you do the north channel.

Q. 484. But concede that you get a greater cross-section, how is it with regard to velocities?

A. Well, the velocity is less in the south channel than in the north channel.

Q. 485. How much less?

A. It would be hard to say, but I should say it would not be much more than three-fourths in extreme high water; I should
611 guess not; three-fourths of the velocity, and perhaps not that, in extreme high water. That would be partially due to less slope and partially due to less total depth.

Q. 486. Your people had measured the amount of water used from the canal on the north side there, have you not?

A. Yes, sir.

Q. 487. What proportion does the amount used by the various tenants of the canal company bear to the amount leased to them, as far as you know?

A. Well, it generally exceeds—quite a good deal; but I couldn't say. I don't recollect the leases; I don't know enough about them to figure out.

Q. 488. Do you know the total amount used now?

A. It is about 70,000, fair stage of water—70 to 75 thousand cubic feet a minute when they are all running.

By Mr. CARY:

Q. 489. *Question.* In a rise of water from a given stage would not the relative increase of velocity between the north and south channels be greater in the south channel than in the north?

A. I think perhaps the relative increase would be a little greater in the south than in the north.

Examined by Mr. ORDWAY:

Q. 490. You answered substantially to Mr. Mariner's question a short time ago that without the guard-lock the old canal might have possibly carried the whole flow of the stream by producing or
612 the result of which would produce a fall of a lineal foot and a half in the upper thousand feet of the canal. What velocity per minute would such a fall of water down it have produced?

A. In the narrowest part, assuming 160,000 cubic feet a minute flow of the river, calling a cross-section about 600 square feet, according to the smallest cross-section, it would be about 4 and $\frac{4}{10}$ feet per second.

Q. 491. Would navigation of that canal at that time under those circumstances have been practicable under that velocity?

A. I don't think it would.

Q. 492. How long would the canal probably have lasted; or, in other words, how soon would it have been worn away by erosion lying in the bed that that canal is composed of?

A. I think it would have washed the rock very soon.

Q. 493. Would it have been reasonable or proper hydraulic engineering to have constructed a canal for the carrying of the water for even hydraulic purposes alone in that way?

A. It would not.

Q. 494. Has there ever been any breaks, to your knowledge, of the bank of the canal next the river anywhere between the guard-lock and the bend near the Smith flouring mill?

A. There has.

Q. 495. How many do you recollect of?

A. I only recollect of one break.

Q. 496. How large or serious was that?

A. It carried out a space of, I should judge, 4 or 5 feet below the surface of the water in the canal at common stage, part of the
613 wall here, and extended perhaps 75 feet, I should judge, up and down the canal.

Q. 497. In the construction of the canal, supposing it to have been constructed for the passing up and down it of boats drawing from two to three feet and a half of water, you have testified that it would have been necessary to at least have over the mortise still a foot of water to spare—that is, a foot greater depth than the draught of the boat. About how much greater depth in the water of the canal downstream from the guard-lock would it be necessary to have—that is, in order to good engineering—than the draught of the boat?

A. The deeper and broader the canal the better for navigation. The use of a canal too shallow of course impedes the velocity of the boat very greatly and the movement of the water around the boat and under the boat, and therefore the depth is quite material, and the boat, if it has considerable power, sinks itself in such a case a foot or so below what it would in deep water, especially in a stern-wheel boat.

Q. 498. Wouldn't it do the same thing in passing over the mortise sill of the lock?

A. It would, to a certain extent, but, it being shorter, it can run those a little better, even if they have to slow up as they run through.

Q. 499. Is not the pressure of the water in the canal upon the retaining wall and river-side canal bank very much increased as you increase the depth of the water in the canal?

A. If the earth banks up that wall in place of water, I should say not.

Q. 500. Is there no more danger of break in that retaining
614 wall and river-side canal bank by reason of deep water in the canal than there would be if it was only five feet deep?

A. I think there is.

Q. 501. Would it be good engineering, then, as that canal was constructed, to wit, from a short distance below the head of it down to the bend, by the placing of the retaining wall at, say, half the width of the canal into the river and excavating from the land side over against the wall to leave the bottom of the canal any deeper than would be necessary for the passing down and over through it of boats drawing the number of feet draught which were intended for it?

A. Yes; I think it would be good engineering to gain what depth you could.

Q. 502. Regardless of the strain upon the retaining wall?

A. I don't think the strain in a similar case to this would be increased very much by having a greater depth of water as long as there is as strong a bank as there is.

Q. 503. Then your answer is as before regardless of any supposed strain upon the retaining wall?

A. There is a little more danger, I think, of leakage without it is thoroughly sheet-piled to the rock and secured to the rock—more danger of breaks—but I don't think the pressure on the stone-work to tip over the wall would be any greater from pressure except from leakage breaking it away.

Q. 504. Did you ever see the records of the board of public works in the canal company's office while you were in the employ of the Government or since with reference to the construction of the
615 guard-lock which we have been enquiring as to?

A. I don't recollect definitely anything about that. I read most of the action of the board of public works—looked them over.

Q. 505. If I read what I will say I personally copied from those records, do you think if you have ever read it yourself that you would recognize what I read as a part of the records?

A. Well, I shouldn't want to give testimony that I could recognize it; it was so long ago; it has been ten or twelve or fifteen years since I have had much of anything to examine about them.

Q. 506. I want to read to you from memorandum which I now have before me and which was made by myself within, I think, a year past in the office of the canal company at Appleton, through the politeness of Mr. Smith, the secretary, giving me the books. In

Book 1, board of public works, marked on the back "Record of Proceedings, Secretary's Office, Fox & Wisconsin River Improvement," appears on page 4 Chief Engineer C. R. Alton's report; was made under date September 5, 1848: "The Grand Kaukauna, 1½ miles below the foot of Petete Chute, has about the same length of rapids and would require a dam 660 feet in length, 5 feet high, and a set of flood-gates, two locks of ten feet, two of nine feet, and one of eleven feet lift, and 1½ miles of canal, costing $88,330.26."

On page 323 of the same book appears "Report of J. Kip Anderson, chief engineer and superintendent, as to progress of
616 work and guard-lock at Kaukauna, under date January 2, 1852." This is the report referred to in the last sentence. I think I can read it literally: "As to Kaukauna. Report of J. Kip Anderson, January, 1852, chief engineer and superintendent, page 321; oldest book, page 323." As to Kaukauna, "Work commenced the middle of June, 1851. Large portion of a canal has been excavated. The protection wall on the upper section more than half finished. At upper end of the canal it is intended to place a guard-lock in order to protect the long line of canal between the dam and head of the first lift-lock. Though the building of this lock will add to the cost of the work, yet, as it appears so requisite for its safety and protection and as it met with the hearty approbation of Mr. Day, the consulting engineer, I have not hesitated to add it to the plan of work." There is a reference there in the report to the Martin contract which I have not quoted. (Reference to Martin contract is found in report of board to the governor, January 2, 1852, pages 306, 307, appr-isal of buildings on the land of the canal at Kaukauna.) Now, the report of Mr. Day as to the guard-lock is added and is found at page 289 of the same book.

(Day's report is to be furnished by Mr. Ordway and inserted in the report of the testimony at this point.)

Mr. ORDWAY: I read from the further proceedings of the board (and this is for the purpose of showing what the State intended at the commencement of the building of this canal, whether it says so or not): "Record of proceedings of board of public works. First
617 meeting at Madison, Sept. 4, 1848. Present, all the members of the board, to wit, A. B. Estes, H. L. Dousman, A. S. Story, J. A. Bingham, and Curtis Reed. Board organized by the appointment of Mr. Estes chairman and Mr. Reed secretary *pro tem.* On motion of Mr. Story, resolved that Conde R. Alton be, and he hereby is, appointed chief engineer during the pleasure of the board at $1,800 a year for time actually engaged. Adjourned until the 5th inst. On the 5th, on motion of Mr. Dousman, chief engineer to begin forthwith the survey of the Fox and Wisconsin rivers, beginning at the western extremity of the proposed canal at Portage City, thence down Fox river to Green Bay, and thereafter from the place of beginning down the Wisconsin river to its mouth, with a view of a plan of an uninterrupted steam communication by water from Lake Michigan to the Mississippi river, and to report to the board at its next meeting."

Next there followed the letter from C. R. Alton repeating the terms and accepting them. The board adjourned Sept. 5th to the first Monday in December, 1848, but the records do not show that they then meet. The next entry is, "The board met at Madison on the 15th day of January, A. D. 1849, being the day appointed by the governor as authorized by the board at its first meeting. Chief engineer made his report, which was accepted and adopted, as follows: Plan should correspond with size and depth of the two streams, etc. Having these objects in view, it is believed that the following dimensions might be safely adopted, viz: A canal with forty feet width of bottom, banks eight feet high, or the slopes 1½ to 1 or 2 to 1, according to the nature of the materials, and calculated for a depth of four feet at usual low water; locks to correspond, 125
618 feet long between gates and 30 feet wide in the chamber; steamboats adapted to locks of the foregoing dimensions might be forty feet long, 16 feet beam, and 28 feet across the guards; 80 tons capacity, exclusive of engine and machinery; barges to be used as tows." (The report then proceeds as to different localities on the route, Portage City, Neenah, from Fort Winnebago to Lake Winnebago, then from Lake Winnebago to Green Bay.) "The main obstacles to the navigation of the Neenah occur between Lake Winnebago and Green Bay in the important rapids that are found at the following points, viz: Winnebago rapids (Neenah and Menasha), Grand Chute, Cedar Rapids, Petite Chute, Grand Kaukauna, Rapid, Croche, and Desperes. * * *

The plan to be pursued should be the construction of the necessary dams, lift-locks, and short lines of canals connecting navigable waters above and below."

Mr. ORDWAY: I pass over the localities of Winnebago rapids, Grand Chute, Petite Chute, coming to Grand Kaukauna, as to which the report continues: "One and one-half miles below Little Chute dams 660 feet long, 5 feet high, a set of flood-gates, and two locks of ten feet lift, two of nine feet, and one of eleven feet lift, and a mile and a half of canal." The next entry is upon my minutes: "On the 19th of January, 1849, board reported to the governor and recommended and approved of the foregoing report, pages 6 and 7" (that that I have read above). Next quotation from the book:
"March 3, 1849, board met at Madison, and on March 5,
619 1849, the chief engineer was appointed superintendent."

Those are the only extracts that I thought or still think necessary to read in order to show a fair report of the proceedings at the commencement of the construction of this waterway. If any of the parties require it, we will produce the books or more extracts from them.

620 EDWARD RUGER, a witness heretofore examined in this case, recalled by the parties represented by A. L. Cary and David S. Ordway, and is asked:

Q. 507. Have you within the last year made a survey of the Fox river, at Kaukauna, from a point below the present Government

dam and extending upstream some distance, and about what distance?

A. I have made a survey of the Fox river above the Government dam of perhaps about ¾ of a mile upstream, I should think, from recollection. I may be mistaken in that, but about that distance, I should think, up opposite the gardens on the southerly side of the river.

Q. 508. Have you been sitting here and listening to the testimony that was taken upon this examination thus far?

A. I have for the last two days.

Q. 509. Here in this office?

A. Yes, sir.

Q. 510. Did you see the map Exhibit 4, which Mr. Ordway put in evidence yesterday, showing the course and direction of the river from the present Government dam upstream?

A. Yes, sir; I saw the map.

Q. 511. Which was made by Captain Edwards?

A. Yes, sir.

Q. 512. Did you make a map upon your survey of that part of the river?

A. I did.

Q. 513. How does your map compare with Captain Edwards'?

A. In general appearance very much the same, I think.

621 Q. 514. Supposing that the point of land on the northwesterly end of the old Government dam, which would be about over against the delineation of the old guard-lock on Exhibit No. 3, to have existed in fact at the time of the construction of the original guard-lock and canal, and suppose it projected out into the stream so that the retaining wall of the canal at and opposite to the old guard-lock was placed close up to the original northwesterly bank of the river, the lower part of the retaining wall from just below the dam standing out into the river at least half the width of the canal, and the circular form of the river above the dam existing as shown on the map put in evidence yesterday, referred to, what would be the effect on the flow of the water as coming around that point or by that point, as to whether it would have a tendency or not to send more water than would otherwise be due into the south channel as it is shown to be located and as its dimensions are shown on map Ex. A of the plaintiffs already put in and Ex. No. 1 of the Kaukauna Water Power Company already put in?

By Mr. HOOPER: Objected to because it supposes the existence of facts not shown to exist.

Mr. MARINER: And also that the dimensions of the point are not stated.

A. You want to state anything about the shape or extent of that point out in the question.

Q. 515. I can't do that any different from what it appears on those maps. We have no proof of it except as it came down to the water's edge at that point; except also as it shows to be

622 a projection on those maps.

A. I should say the effect of that point projecting out, as set forth in the question, and the contour of the bank above the point, would have a tendency to cause a greater increase of flow of the water in the south channel than would otherwise exist except for those conditions. It would give an impulse to the water that way.

Q. 516. Would that impulse increase with the increase in the volume of water at that point?

A. The greater the volume of the water the greater the increase of the impulse, in my judgment.

Q. 517. Have you had any experience as a hydraulic engineer in reference to projections in waterways of a similar character and of guarding against or protecting against them?

A. I have.

Q. 518. State when and where.

A. I have upon the Missouri river, above Omaha, at the new water-works plant for Omaha that I constructed there. I have also had on the Des Moines river, in Iowa, and upon the Cumberland river, in Tennessee, and, perhaps, other places noticed, and had occasion to notice upon the Missouri river for a year and a half altogether the effect of building out into the stream cribs from a bank where the water was thrust against it to protect that bank from inroads of the water. Those cribs that we built out were about 150 feet long from the bank and they declined down the stream at perhaps an angle of 45 degrees. The effect of those cribs as they were put in, the first one was to turn the water away to the other side of
623 the stream and to cause, by the eddy and deadening of the water below them, the deposit of sediment from the Missouri river when it was running full—it is a stream that carries a great deal of sediment—below these cribs, so that it deposited several feet of sediment below the cribs, and when the cribs were put in it had a tendency and did throw the water to the other side and cut off a bar that was there. That was the effect of it there. Upon the Des Moines river at Ottumwa, Iowa, both above and below the town, the C., B. & Q. railroad above the town and other parties below the town put these cribs in, which would be in the same nature of a projecting point of any kind, land or otherwise. Those cribs were built out broader than these that I put in the Missouri river, and the effect of them was to throw the water away from that side and protect the inroads on the bank and to throw the flow towards the other side. I will state that those in the Missouri river, when I got there, had cut in a hundred feet opposite the water works, so that the whole plant was endangered—the pump-house that was partly up and the reservoirs that were partly constructed, and these works had to be built in defense of that, and that was the effect of those cribs, to throw the water away and to protect the bank.

Q. 519. Would that be a similar effect to what would be produced by the projection of this point of land?

A. The effects would be the same if produced by a projection—a point of land or crib. Perhaps not in degree, but the tendency would be the same.

624 Q. 520. Suppose there was no south channel at the point where the south channel in fact exists and the water came around the supposed point of projection so as to pile up against the south bank, tending to commotion and roughness there, taking into account the size of the stream and the width of the channel just above the dam and the width of the channel as it exists from the head of Island No. 4 downstream, supposing the head of Island No. 4 was continued right up to the south end of the dam, how far downstream would it probably be before the water of the river would reach a level from the northerly to southerly bank?

A. Well, I think that would depend somewhat upon the direction of the point of land out. If you put an obstruction out pretty near at right angles it would come against it and would stop the water here, and it might be lower on this side.

Q. 521. You mean by the word "here" above?

A. Yes; above where your point of land is; upstream from the point of land. It would depend somewhat upon the direction of that point out with reference to the bank above and below.

Q. 522. Supposing a point to project substantially at right angles as you have just stated?

A. Then it would throw it across the stream at a shorter distance downstream than as if it sloped partly downstream.

Q. 523. My question involved the size of the Fox river, the form of it above the dam and the width of the main channel, and it was upon the assumption that you were familiar with about the

625 amount of water that run there, 150,000 cubic feet, as mentioned by Captain Edwards, in a fair low stage, and running up to 2 or 3 hundred thousand cubic feet in high water. Take it under all those circumstances, at a fair low stage, for instance, how far down would it be before that water would come to a level in the channel if there was no south channel probably?

A. Well, I should think it would below the point of the island somewhere before it came to a level.

Q. 524. Would it be further downstream the higher the stage of water or would it not?

A. I should think it would.

Q. 525. The greater the rush of water against the south or southerly side of the river, the further downstream it would be before it would come to a level in the channel?

A. Before it would equalize itself as across the stream. That would be my judgment about it. How far downstream, I couldn't state. It is a proposition that is rather indefinite.

Q. 526. There being the mouth of a south channel opposite that assumed point, would not the natural flow of the stream around it tend to increase the flow of the south channel, as it was in a state of nature somewhat more or less above what it would be found to be from actual levels and measurements taken across, as shown on Exhibit A put in evidence heretofore, not having regard to that increased propulsion?

A. In my judgment it would increase the flow in the south channel over and above what would be indicated by the level cross-

sections, excepting for this impulsion. The impulsion would have a tendency to increase.

626 Q. 527. And would the increase be more greatly out of proportion to an engineering level, the higher the stage of water was in the river?

A. Judging from my experience and observation on other streams, I should say that the greater the flow of water the greater the effect of the projection. I mean by greater more volume. When there is a deeper volume of water it always goes more rapid in any stream than it does when it is a light volume. I mean in a freshet or in an increased flow of water in a stream.

Cross-examination.

By Mr. HOOPER:

Q. 528. Mr. Ruger, if there was a point on that bank, as has been supposed, and it projected sufficiently to affect the current and set it onto the south side of the river, wouldn't it also tend to cause deposits of earth along on the north bank of the river downstream from the point?

A. That would depend upon whether the stream carried a great deal of deposit. If it projected out sufficiently far to make an eddy back of it and the stream carried sediment so that this point of land caused a check in the velocity there, the sediment would be inclined to drop where there was less velocity than that that was carrying it on.

Q. 529. If it didn't affect the velocity and didn't cause eddies, it would not send the water onto the south bank, would it, to any appreciable extent? That can be answered yes or no. Please answer it yes or no.

627 A. If it didn't affect the velocity on that side or didn't cause an impulsion across to the other side of the stream—if there was no impulsion towards the other side of the stream, so that in fact it had no effect, then it would not.

Q. 530. It would not cause any impulsion onto the other side of the stream if it didn't deaden the stream and cause an eddy, would it?

A. It would have a tendency to deaden the stream below it.

Q. 531. If it did deaden the stream below it, then it would tend to cause the deposits along that shore, wouldn't it?

A. Yes, sir; if it carried sediment.

Q. 532. Does not every river carry sediment at one time and another of the year?

A. Some very little, but most all rivers do carry some sediment.

Redirect examination.

By Mr. ORDWAY:

Q. 533. If the projecting point was of sufficient prominence to cause an extraordinary flow of water over onto the south bank of this river, it would have a tendency, would it not, to carry anything

and everything floating on the surface of the water over onto the south shore also?

A. It would have a tendency to carry what was floating on the surface in the direction of the stronger channel and the stronger velocity.

Q. 534. There has been no testimony in this case with reference to whether there was sediment or not in the bottom of the
628 Fox river at this point or anywhere near it, but the testimony is that on the north side of the river, from below the present Government dam down to the bend, the channel is deeper; that the current is stronger, and that it is washed out clean all the way down. Now, if there is no sediment to be found there now, is there anything upon which you, as an engineer, can base an answer that there was ever any sediment left or caused by this projecting point?

A. Where a point projects out in that manner, as described there, the effect of it on the Missouri river was this: When we put out other cribs below and then filled in, as we did, between the cribs with brush and stone tied together, then the effect of the projecting of water across was destroyed, because it made like a new bank and it followed down the new bank, but where the cribs went out in the first place, without anything leaning down from the end of the crib down the stream to make a new bank, then the effect was to throw the water across and the deposit below, but as soon as the upper crib was connected down to the other cribs, so as to make a bank—and we did that for two reasons; one was to strengthen and get a great weight against it—the effect then was that the water followed right along down, along the work that we had put in, because it had no chance to get around. Then it kept it clean there; it scoured it right along in front of it.

Q. 535. You have heard the testimony to the effect, and you have taken levels yourself, have you not, at this same point, showing that there is a fall from the north end of the Government dam
629 down to the Smith mill, within a distance of about a thousand feet, or something like five feet?

By Mr. HOOPER: Objected to for the reason the witness has testified to the fact and testified to the distance of the fall before, and it is simply duplicating his testimony.

Q. 536. What I wanted to ask was this: If there was very much of a projection at the point referred to, on the north side of the river, about over against the old guard-lock, which produced a very large, extraordinary flow of water over onto the south bank—if it is not true that with the large fall existing in the bed of the stream from the north end of the dam down at least as far as the red mill, it would wash out everything in the nature of sediment and there couldn't be any sediment lodged there by possibility?

A. The fall is very strong for the distance. The fall is great all along in that vicinity for the length down the stream, more so than ordinarily in streams, and of course that has an effect to increase the velocity. It is 5 or 6 feet, I think, from the dam down to the mill there, in a short distance, and that has a tendency to make a large velocity in itself. The water would assume quite a

strong velocity by the time it got there, if it started without much, by reason of the great fall. The fall in the stream there itself is sufficient to stop the deposit of sediment.

Q. 537. Under the circumstances supposed, with a flow of water which produced a piling up upon the south bank and into the south channel naturally, would the absence of sediment at a point
630 near to the northerly end of the Government dam, with the existing fall in the bed of the stream as it is shown by the testimony in the case, — that there was any projecting point at the place mentioned?

A. I should say not.

Q. 538. Would it indicate that there was not an extraordinary flow of water over against the south bank?

A. I wouldn't say an extraordinary.

Q. 539. Why?

A. Well, I would say that it was increased there, but I wouldn't state it was increased to an extraordinary extent. I would say the tendency and impulse would be to increase the flow of that water.

Q. 540. And wouldn't it tend to clean out the bed of the river all the way down?

A. I don't think in the fall of that river there there would be any deposit of sediment; couldn't be, I don't think.

Cross-examination.

By Mr. MARINER:

Q. 541. What is it that causes this motion across the stream, the reaction where a stream is flowing onto a bank, where the current is such that it strikes a bank? What is it that causes the current to cross the stream?

A. The current meets a resistance; something that is solider and more resisting than itself. Water gives equally in all directions and very freely; and, coming against something that is immov-
able, it has a tendency to give way; and if that that is im-
631 movable has a direction and a thrust out the other way, across the stream, the tendency is to throw the water across the stream.

Q. 542. Well, what is it that makes that tendency?

A. The freeness of water to move in any direction where it meets the least resistance.

Q. 543. If you build a crib in perfectly still water, the water won't move away from it, will it?

A. It has no effect. It has no head. Water never moves except in obedience to some fall.

Q. 544. What is it that makes the water go away from the crib?

A. It is the velocity of the water as it comes down to the crib.

Q. 545. And it gives up a portion of its velocity in the direction that it was going by the impact of the crib, and then what becomes of the rest of it?

A. There is a change in the direction of the stream, in some measure. Now, in regard to this change over to the south channel,

I wouldn't attempt to state how much the velocity was thrown or how much the increased height of the water over there is, but it would be increased in some measure by reason of the obstruction.

Q. 546. That is what I want to ask you. As I understand, there is a rule for it. You can get at it, and I am trying to ask you for it.

A. Well, the rule that I gave you—my reason for understanding it is that it meets with something that resists its going in the direction, and then it turns in the other direction where
632 there is the least resistance. I don't know of any formula for it.

Q. 547. It is the resolution of the motion, isn't it? You have got a motion towards the bank, and a blow, a striking upon the bank, an impact, and then it goes off from that impact in some angle, don't it?

A. Yes, sir; it meets with a resistance there.

Q. 548. It is the same thing you get in playing billiards?

A. I don't know. I don't know how to play billiards.

By Mr. STEVENS:

Q. 549. What would be the direction of the returning water?

A. That would be affected somewhat by the direction of the projection with reference to the stream above and how the current struck it.

Q. 550. You have seen people play billiards?

A. Yes, sir.

Q. —. You know the ball that is moving strikes another that is still and goes off at an angle?

A. I know that.

Q. 552. Now, do you know how to compute that angle?

A. I have never tried to compute that angle, and I think a ball and water would be very different things, because water gives so freely in another direction or in any direction, up or down. A ball wouldn't do that.

Q. 553. The water has to move in other water when it goes off, doesn't it?

A. All particles of water move within themselves.

Q. 554. And the ball that goes off moves any way, so it
633 would move more freely than water, wouldn't it?

A. Water gives more freely than anything except air.

Q. 555. It depends on the density of the fluids. The billiard ball goes off quick and at an angle. You can lay it down with a rule and you have a sharp angle. Now, the water, you don't have such a sharp angle as that, do you?

A. It would be more yielding. Water, unless it met with something that absolutely resisted it, would not be apt to go off at right angles.

Q. 556. Not at right angles, but I mean at an exact angle. The water goes in curves, doesn't it?

A. When water comes down a stream and meets a resistance, say, it throws it the other side; it goes over and strikes the other

side, and if it meets a resistance there—you will notice the contour of a river is a succession generally of those curves.

Q. 557. The billiard ball goes right at an exact angle. You could rule it right off, couldn't you?

A. I suppose you can. I couldn't.

Q. 558. Isn't it, then, the motion of the water towards the bank and the impact that sends the water off there across the stream?

A. The direction of the water and the bank above, and the direction of the water coming down the bank above, and the change here in the direction of the bank, and then in conjunction with the property of water, that will give in any direction where it has an outlet or where it does not meet with resistance, would cause the water to go across towards the other side that did not resist.

634 Q. 559. If it had the velocity here (indicating), it would go off here?

A. If it was dead water, the effect of the bank would not be any effect. It would be simply a question of displacement of so much water. I have seen it go across, though, and cut out bars on the opposite side by those cribs, wings.

Q. 560. How if the water is coming down here rapidly and strikes a point; will it go across the river sharply or will it go at a more acute angle with the course of the stream?

A. That would depend in some measure upon the direction of the projection out; but these particles or fillets of water—vertical fillets of water next to this—if they met a resistance and had a tendency to crowd out, they would communicate that resistance to the other parts of the water out further, and while those particles of water that were right next to that might not go in there *there* tendency would be to throw these others over this way further out, and the effect would be to send more water in the opening of the south channel than otherwise would go in there.

Q. 561. I am not talking about the south channel.

A. I am applying the principle to the south channel.

Further hearing adjourned until 10.30 a. m.

635 10.30 A. M., FEBRUARY 8TH, 1892.

(Examination of witness RUGER resumed by Mr. MARINER:)

Q. 562. In your opinion, would the water coming down the river and striking upon the north bank or upon any point projecting from the north bank lose any of its velocity by the impact?

A. The velocity of the water right immediately adjacent to the bank or the projection, in my judgment, would be checked in its velocity somewhat, but the water farther out would not materially; I don't think at all.

Q. 563. Where you have observed this in other streams, for instance at Omaha, what was the velocity of the current there?

A. It was a very strong velocity in high water. The fall of the river at Omaha was not as great as this river in the distance. I don't know exactly what it was, but I know it was not as great;

but the velocity there is very great in high water, particularly when the river is on the increase. Although the water may be high, as soon as the inrush of water checks it seems to check the velocity quite largely there; but it has a very strong velocity.

Q. 564. Well, can you put it in dimensions?

A. I never checked it to see.

Q. 565. You have got some idea what it is.

A. Well, not with reference to cubic feet per second. It was a very strong velocity.

Q. 566. Well, put it miles per hour.

A. Well, I should say—it would be a mere matter of judgment, this would—that the velocity there in high water might
636 run from 3 to 5 feet per second. It cuts and washes very heavy across from one bank to the other; cuts away.

Q. 567. That would be about two miles an hour, wouldn't it?

A. Three feet per second would be 180 feet per minute.

Q. 568. That is 10,800 feet an hour.

A. Pretty nearly two miles an hour, I should judge. That would be a mere matter of judgment. I never checked it at all.

Q. 569. Do you know what incline will cause that velocity in the stream, what fall?

A. That would depend entirely upon the depth of the water and how much of the bed and banks came in contact with the water, with reference to the depth. It all enters in. If the water was deeper with a given bed, so that it came up on the banks, the friction upon the bed having been satisfied with the lower part of the water, it is only the friction on the banks that is added; and in the same stream where it is confined within the banks a greater depth of water makes a greater velocity; but a person would have to know the cross-section and the fall to get at it accurately.

Q. 570. But isn't there a rule that you have that in ordinary circumstances a certain velocity is due to a certain incline?

A. Yes; but it includes the cross-section area of the water. It is what is known as Cutter's formula, and that has to be taken into account. The number of cross-section feet of water area and the number of lineal feet of the wetted bed and sides—those have to be taken into account, and the surface slope; not so much the bed slope. It is the surface slope of the water. Those three
637 things enter in, and then the proposition becomes so that you can make a proximate estimate. Of course, there are other things that enter in. That wouldn't be as accurate as an accurate measurement.

Q. 571. I understand that. But about what fall per mile in a stream like the Missouri river would occasion a current, say, of five feet per second?

A. That would depend entirely upon the depth of water in the stream.

Q. 572. I am talking about this stream there at that place.

A. Well, the water there varies, you know, from 14 to 15 feet, perhaps, from high to low water, and it makes a great difference.

I wouldn't want to answer that proposition without definite conditions.

Q. 573. I am talking about it with the velocity that you gave of 3 to 5 feet per second. About what fall in the stream would occasion such a velocity?

A. Well, as I answered you before, I should have to know the cross-section area of the water to give you an answer, for it enters into it, and the number of feet of the bed and banks that came in contact with the water, as well as the surface fall. All three elements enter into the proposition.

Q. 574. I am not asking you to split hairs on it—simply a general statement.

A. Well, I wouldn't want to give you an answer to that in general terms in that way, Mr. Mariner, because the other things I know enter so largely into it.

638 Q. 575. What fall in an ordinary direct stream will create a velocity of a mile an hour?

A. Well, that same thing enters in—the depth of water and the amount of surface that it comes in contact with.

Q. 576. Well, take it a stream 3 feet deep and a hundred feet wide?

A. Well, it is quite a long process to figure it, Mr. Mariner. You have to take into account the hydraulic slope and the mean radius to get it in—a great many elements that go into that proposition. Ordinarily speaking, as I have checked rivers, the velocity has been from 2 to 3 feet per second of rivers that I have checked; some not nearly as great as that; some not over one. I may have overstated the velocity in the Missouri river. I am inclined to think it would not be five feet; that it would be perhaps three, though it may have been higher. Three feet is a large velocity in a stream; but rivers where I have checked them it has generally been varied from one to three. Some streams I have checked in Wyoming were five in high water—in a flood time.

Q. 577. What velocity in a stream will carry along fine sand in the current—not drop it out, but carry it along?

A. Well, my judgment now would be that two feet per second or less would do it—move it—carry it along; less than two feet per second.

Q. 578. Well, at the time that you were doing this work at Omaha and observed the Missouri river it carried a very large amount of sediment, did it not?

A. Yes; in high water it carries a great deal of sediment.

639 In the winter when it is covered with ice the water is pretty clear, but in the spring and when the ice goes out in freshets it has a terrible amount of sediment. There is a great deal of sediment and a great deal of drift.

Q. 579. What velocity in a stream will move along stones of the size of your fist so as to keep them moving?

A. I don't recollect that now; I have seen it; have got it in books, but don't recollect it; I think I have books that would give

it to you, and I could take it from them; I haven't made experiments myself.

Q. 580. You say that in repairing the damage done by the river there you built a crib, fastened one end to the bank and the other end extending out into the river at rather an acute angle with the course of the river.

A. About 45 degrees. It wasn't fastened to the bank; it was sunk and filled with stones; it was a crib about ten feet wide.

Q. 581. It was attached to the bank?

A. Yes; it came up and extended up a little on the bank.

Q. 582. Rested is the right word?

A. Yes.

Q. 583. That threw the current off towards the other shore?

A. Yes; it did.

Q. 584. Then you built a crib below?

A. Yes; I built three; then a large crib that was the intake crib, and then two below; I think there were six cribs in all; they
640 went along pretty nearly about a third of a mile along the stream. but the upstream crib was put in first; that was the effect of it immediately; then, as we come to put in these other cribs and fill in, it made like a new bank there, and the checking this here caused a deposit up here, and it really made a new bank out there, about a hundred feet further out; then the water followed down that bank; it didn't seem to throw it across as much as the single point going out; it kept it away and protected the bank entirely, but as soon as this was filled out so as to make a new bank here it didn't have the tendency so much to throw it across the stream as the single crib did; that was the fact as I observed it there; I was there about a year and a half, constantly on the river.

Q. 585. What did you make that crib of?

A. I made it on the upstream side of 10 x 10 pine timbers, on the downstream side of 8 x 8, and I put cross-braces in about every four feet of 8 x 8; the ice comes down there with great force; then I double-planked it with oak on the upstream side before I got this riprapping in, and sheeted it with boiler iron; the ice and big trees would come down and strike into it; then, afterwards, I filled it in with the willows and stone and brought the whole bank up higher than high water, so it really made a new bank out there.

Q. 586. What was the reason of making it as heavy and as substantial as that?

A. Well, if you had to deal with the Missouri river you would see. I have seen it take out the Government work they put in right opposite to me there some years before. It is a terrible stream to fight.

Q. 587. What makes it? Is it its rapidity or what?

641 A. Its rapidity and the banks cut so easily and the amount of drift and ice that comes down. We had heavy ice gorges while I was there. When they would break they would come down in great masses of ice.

Q. 588. So if you put an earth bank in there it wouldn't have done any good?

A. It would have cut away. The bank cut off a hundred feet before we stopped it at all, before I got there.

Q. 589. What is the nature of that bank?

A. Well, above me it was very high bluff. At the bottom it was limestone. Then it was sand quite a ways above me, and just above me it was clay, and along from the upper part of our works further down the banks were not so high, but, perhaps, fifty feet above the river, and it was cutting in them. Then below it went over and cut in on the Iowa side, and the Northwestern had previously protected themselves in a similar manner, I was told. I never was there to see it.

Q. 590. Relatively do you know what the incline of this stream was above where the Government dam is, before the dam was put in?

A. No; I never took any cross-sections of the main river here or any levels except just recently.

By Mr. ORDWAY:

Q. 590½. You mean the inclination of the bottom of the stream above the dam?

Mr. MARINER: Yes.

By Mr. ORDWAY:

642 Q. 591. Didn't you ever make cross-sections up a good ways above the dam?

A. I made a couple of cross-sections clear above, by the garden, but I didn't take levels on the bed to see the slope of the bed at all, and I took none across the main channel below the dam at all. That work, you recollect, had all been done by Captain Edwards, and you said you didn't care about my touching it.

By Mr. MARINER:

Q. 592. How far above did you make a cross-section?

A. Well, I should say now, perhaps, ¾ of a mile. It would be a recollection. I went up opposite a garden that is up there. It is, perhaps, ¾ of a mile; maybe a little more or a little less.

Q. 593. How much was the bed of the river above the bed immediately below the dam?

A. I didn't take the bed below the dam. I don't know.

Q. 594. You have got some idea about it. Can you tell the top of the dam just as well?

A. By looking at my books I could tell how the surface of the water was with reference to the top of the dam. I think the water was practically level above the dam and on one side of the dam, I think, about half a foot and on the east side of the dam over that of water running over the dam. That would be my recollection, but there wasn't much fall in the water above the dam up to the distance I went. I think the influence of the dam extended back as far as that—that is, some influence. I don't know as its full influence extended back there.

643 Q. 595. About how high was the bed of the river where you took the cross-section, above the dam, should you think?

A. I think I can tell you about the depth of the water (referring to memoranda). I think its influence went back as far as I went.

Q. 596. You mean upstream?

A. Yes; by the word back I mean upstream. The depth of the water in the pond, about ¾ of a mile above the dam, varied from 10 feet; pretty nearly 11 feet. Well, in one place I see it is over 11 feet; about 11½ feet. The general depth of that water would be 8 or 9 feet, I see by looking at my notes.

Q. 597. And the deepest water, you say, was about the top of the dam?

A. From half a foot to a foot over the dam, I think it was; that would be my recollection.

Q. 598. Where you made your cross-section, did you level between that and the dam?

A. No; I think not. I simply run the lines of the river. I didn't level between that and the dam at all. I simply run the lines of the river to get the boundary of it. The depth of water there runs six feet, and up as high as eleven feet. For the most part across would be, I should say, eight feet or in that neighborhood, as I look at my notes. It might average less than that. It might average more than that.

Q. 599. What was the flow of the river, the velocity, at about where you made this cross-section?

644 A. The velocity varied on different lines. I took stations ten feet apart on two lines and put them, I think they were 113 feet apart. Then I put in loaded poles so that they would ride vertically in the water, and ran them from one point to the other on the corresponding station. Well, now, the velocities there, as I run them in feet per second, varied from almost nothing on the shores out to a foot and a half per second, a foot and seven-tenths, and on one or two of the lines I got two feet per second or a little over, so I shouldn't think that the influence of the dam went back there so much. I shouldn't think the influence of the dam went back there to any great extent.

Q. 600. About what was the velocity in the main stream 400 feet below the dam?

A. That I never took.

Q. 601. Well, did you examine the bed of the main stream below the dam at all?

A. I did not except to see it from the side.

Q. 602. You don't know whether it was swept clean right down to the rock?

A. Well, on the two sides—there was no mud on either side. I took the surface of the water on either side and looked at it, but I didn't go across the stream to take any soundings or to examine it at all.

Q. 603. What was the bed of the stream?

A. Well, that would be a matter of judgment, seeing it only from the sides. There I think there was loose stones and gravel and, perhaps, rock. Not entirely bare all the way. I wasn't looking at it with reference to that.

645 By Mr. ORDWAY:

Q. 604. Do you mean by that that was on one of the lines of cross-sections referred to?

A. They were 113 feet apart and I took velocity every ten feet going across.

Q. 605. How many cross-sections did you make up there?

A. I think there were 53 or 54 stations.

Q. 606. How many lines of cross-sections?

A. I made two lines, 113 feet apart, I think they were.

Q. 607. And the velocity you mention was between those two lines, was it?

A. Yes, sir; the greatest velocity, the greatest current of the stream was about two feet per second—a little over; it was two feet per second in more than one place. I see four places where it was about two feet per second. There were from 51 on one line to 53 stations on the other, I think, in all.

Q. 608. How did you get that velocity—what was the process?

A. I stretched wires across the stream and I put tags on them 10 feet apart. I took round poles and put lead on the bottom of them and weighted them so that they would ride vertically in the water and nearly to the bed. I had them put in above the upstream transit line, so that they would get the motion of the water before they struck the upstream transit line. Then I took the time that they passed from one cross-section line or one transit line to the other and in that way got the velocity.

Q. 609. Well, the mean velocity between the surface and
646 the bottom?

A. It would take the mean velocity in that vertical section.

Q. 610. And not simply the surface velocity?

A. I didn't take the surface velocity. That is not what I am talking about.

By Mr. MARINER:

Q. 611. Now, what did you estimate the average velocity of the stream at one of those lines?

A. I can give you the cubic feet. I haven't averaged them up. I took each space of ten feet by itself and made the calculation for that, and then the other, and didn't average the velocities clear across the stream.

Q. 612. You mean the cubic feet of water passing?

A. And I got the cubic feet in that section by taking the velocity on this side of the ten feet and on that side of the ten feet and trying that by itself; they run very straight down, and then the other. But I didn't average up the mean velocity across the stream or multiply it by the cross-section. That wouldn't give quite as accurate results the other way.

Q. 613. What did you get the cubic feet moving?

A. The cubic feet, calling the flows as 98 per cent. of the float, the floats not quite touching the bottom and the lower portion of the water being retarded by friction on the bottom, would be a little less than the floats ordinarily. I made 6,965¾ cubic feet per second. About 7,000 cubic feet per second flowing at that time.

By Mr. ORDWAY:

Q. 614. That was on the 28th day of May—what year?

647 A. The water is going, I think, about half a foot over the dam at one end and about nine-tenths at the other. It would average, perhaps, ⅞ of a foot over the dam; across it. It was on the 28th of May, 1892.

By Mr. HOOPER:

Q. 615. Was that waste weir on the dam open and discharging?

A. It was discharging some.

Q. 616. How wide is that waste weir on the dam?

A. It was partly clogged up, that waste weir was; partly open and partly filled up.

By Mr. HOOPER:

Q. 617. How deep is that waste weir.

A. I didn't measure it, but I think it is about three feet below the top of the dam. There was a great deal of drift in there. Whether it is a clear, open waste weir or not when it is cleared out I don't know. I didn't examine that, but I could see from the shore that there was a wasteway there.

By Mr. MARINER:

Q. 618. You said in your examination yesterday that you didn't think there would be any sediment deposited below the point in the river below the dam there. Why not?

A. Because there is so much fall in the river there and there is so much velocity there that I don't think it would collect.

Q. 619. Well, isn't it a fact that the river runs so rapidly between the dam and the Smith mill, for instance, that it would roll down stones as big as your head?

A. Well, I say there was quite a velocity there. I don't

648 think there could any sediment deposit, and particularly since the retaining wall as built right straight down there, and that point is not now out like a projecting point, but the retaining wall leads it down and makes it like a new bank.

Q. 620. Is not the velocity of the river such that anything but a rock bottom would be torn out?

A. Oh, I should say the velocity of the river there was such that it would scour.

Q. 621. That is, scour anything but rock?

A. Well, perhaps large gravel or large pieces of stone, I should say they would remain, but it would scour out any light loose ma-

terial and would probably move small stones. That would be my judgment about it.

Q. 622. Did you observe to see whether there had been a point there originally?

A. I don't know anything about it of my own knowledge at all. The canal came through—that is, the guard-lock and canal were between this retaining wall and the bank as it is now. What was there originally I don't know anything about.

Q. 623. So that your answers to Mr. Ordway's questions yesterday were based upon the hypothesis that there was some time there a point projecting in the stream?

A. That was the way the question was asked.

Q. 624. And you considered that assuming that?

A. I did consider that as a part of the proposition.

Q. 625. How far down the stream did you go?

A. Well, I took levels down as far as the Kaukauna Water Power Company's land extended upon that side. I think it was
649 the city limits also; but I made no survey or cross-section of the river.

Q. 626. Did you observe anywhere any earth on either shore of the river of the main channel—that is, were not the banks either rock or gravel?

A. Oh, there was earth upon the banks.

Q. 627. On top; but I mean on the shore where the water ran.

A. I didn't observe particularly with reference to that. I was simply taking levels along down and sometimes cut across in checking up my levels; I didn't observe that specially at all.

Q. 628. You don't know whether there was or was not?

A. Not from my own observation.

Q. 629. Well, do you remember seeing any earth?

A. I didn't notice specially about that, whether there was earth mixed in with the stone or not.

Q. 630. Are not the beds of all those channels, as far as you observed them, all rock?

A. My observation of the country about there—I should say that underneath there was rock and on top there might be stones and gravel, and perhaps near the shore mixed in with some other earth; bedded in; but I wouldn't state anything about it positively, because I didn't observe.

Redirect examination.

By Mr. ORDWAY:

Q. 631. What does this answer of yours mean with reference
650 to the question I will put you: You say you found upon this cross-section which you made above the dam up in the pond, if I understand you right, 7,000 cubic feet per second flow?

A. About that.

Q. 632. Or thereabouts at that time, May 28, 1892. What does

that mean with reference to a flow of 150,000 cubic feet a minute of the river?

A. Taking it rough at 7,000 feet per second, that makes 420,000. It is not quite three times the ordinary flow, 420,000 cubic feet per minute; 7,000 cubic feet per second. Calling the low flow 150,000, to be three times that it would have to be 450,000 instead of 420,000.

Q. 633. At the point at which you made the cross-sections the water was, if I recollect you right, somewhere from bank to bank, from nothing out into the stream—how many feet deep at the deepest?

A. Something over 11 feet deep in the deepest place at that time.

Q. 634. And thence across the stream, going out again to substantially nothing. Does the depth of the water thus measured have anything to do with the result ascertained, to wit, 7,000 cubic feet per second, compared with or does it have any reference to the measurement of the stream, estimated at 150,000 cubic feet a minute in its ordinary flow, without our knowing what the depth of the water in the stream was at the time of ascertaining the 150,000 cubic feet a minute?

A. I don't see as there is much connection between them.

Q. 635. At the time you made this cross-section and found from several depths of water ten or eleven feet at the deepest, sup-
651 pose there had been no dam below and the water had been running naturally in the bed of the stream, at what I will suppose to be an ordinary depth there, two or three feet, as it was, I suppose, in a state of nature when it is estimated at 150,000 cubic feet a minute, would your result have been the same arrived at by your cross-sections?

A. Why, if the same number of cubic feet of water per second was running in the stream and the dam removed, there would be the same amount of water running in the stream, but the depth of water would be much reduced and the velocity would be likely increased, because, the dam having a head of about seven feet and there being a velocity up there now, if you remove the dam the water would be lowered there, and in order to get the same number of cubic feet that was flowing down in the stream per second you would have to have a greater velocity if there was a less cross-section area of the water.

Q. 636. The result of that, then, is this: That at the time that this cross-section was taken, referred to by you, the water was much higher than the ordinary stage at which it has been estimated as its ordinary flow of 150,000 cubic feet a minute?

A. Oh, yes, there was more water running in the stream; it was more than what has been estimated as an ordinary flow.

Q. 637. And does that account for the difference, then, between 420,000 cubic feet per minute and 150,000 cubic feet per minute?

A. It does. There was more water flowing in the stream. It was in May.

By Mr. HOOPER:

652 Q. 638. Do you recollect whether the early part of 1892 was a very rainy season?

A. I do not now. The water was much higher between May and July that year than it was then. I think it was pretty nearly two feet higher. The time at which my cross-sections were made, I will state, it rained almost every day. I was there. I had to work in the rain. I don't want to state the usual stage of water there of my own knowledge, because I don't know.

(It is stipulated and agreed to between the parties that the signatures to these depositions and the reading over of the same shall be waived, the same to be used with the same force and effect as if duly signed and read over.)

653 STATE OF WISCONSIN, } ss:
Milwaukee County, }

I, John F. Harper, a court commissioner in and for said county, do hereby certify that the above and foregoing depositions of Nathaniel M. Edwards and Edward Ruger were taken before me, at my office, in the city of Milwaukee, in said county, commencing on the 6th day of February, A. D. 1893, at 11 o'clock a. m.; that said depositions were taken to be used in the case of Patten Paper Company, Limited, *et al. vs.* Kaukauna Water Power Company *et al.*, now pending in the superior court for said county: that they were reduced to writing by C. H. Welch and W. J. Buckley, competent and disinterested persons, in my presence and under my direction; that said deponent, Nathaniel M. Edwards, was by me, before examination, duly sworn to testify the truth, the whole truth, and nothing but the truth relative to said cause, and that the reading over of said depositions to deponents and signing of same by them were waived by consent of counsel for all parties.

Dated March 1, 1893.

JOHN F. HARPER,
Court Commissioner, Milwaukee Co., Wis.

Com'r's fees, $45.30.

654 2726–7. Superior court, Milwaukee county. Patten Paper Company, L't'd, *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company *et al.*, defendants, and Green Bay & Mississippi Canal Company, plaintiffs in cross-complaint, *vs.* Patten Paper Company, Limited, *et al.*, defendants in cross-complaint. Depositions of N. M. Edwards and Edward Ruger. Filed Mar. 8, 1893. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

655 Superior Court, Milwaukee Co.

PATTEN PAPER COMPANY *et al.*, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER CO. *et al.*, Defendants.

Trial October 23d, 1893, before Hon. R. N. Austin, presiding judge.

Hooper & Hooper, for plaintiffs.

George D. Green, Esq., of counsel.

David S. Ordway, Esq., and Alfred L. Cary, Esq., for the Kaukauna Water Power Co.

B. J. Stevens, Esq., and E. Mariner, Esq., for the Green Bay & Missi'ppi Canal Co.

Case opened on behalf of all parties by respective counsel and pleadings read to the court.

Mr. Hooper offers in evidence the stipulation dated March 19th, 1890, for the purpose of showing the date of the service of the cross-bill herein, which date is March 10th, 1890.

656 A. W. PATTON, sworn, testified as follows:

Examined by Mr. HOOPER:

Q. Where do you live?

A. Appleton.

Q. What relation did you bear to the Patten Paper Co. (Limited) at the time this action was commenced?

A. I was president of the company.

Q. What relation have you bourne to the company that built the Outagamie Paper Mills?

A. President of the company.

Q. Were you the person who had the control of those companies?

A. Yes, sir.

Q. Before this action was commenced did you have any talk with Mr. H. J. Rogers about the commencement of the action?

A. I did.

Q. Why did you speak to Mr. Rogers?

A. Because——

Objected to by Mr. Mariner.

COURT: Is the reason material?

Mr. HOOPER: It is only explanatory. I think it is, your honor.

COURT: He may answer.

Exception.

A. I wanted Mr. Hooper for my counsel, and he didn't want to take up the case for me unless the Green Bay & Mississippi Canal Co. were willing he should.

Q. Was the point raised that unless you would agree in
657 regard to the division of the channel that I declined to enter on the case at all?

Objected to by Mr. Marnier. Overruled. Exception.

A. Yes, sir; that was it.

Q. Did you on account of that have an interview with Mr. Rogers?

A. Yes, sir; I did.

Q. What was the result of that interview with Mr. Rogers?

Objected to as immaterial. Overruled. Exception.

A. Mr. Rogers was willing to——

Q. Wait a moment. Answer the question yes or no. Did you on that account have an interview with Mr. Rogers?

A. I did.

Q. What was the result of that interview?

Objected to. Overruled. Exception.

658 A. Mr. Rogers was satisfied with the division of the three channels that I proposed or that he proposed. We talked over that the north channel should have one-half of the flow of the river and the south channel one-sixth and the middle channel two-sixths.

Q. When did you build the Outagamie paper mills?

A. 1887.

Q. Had you at that time heard anything about the claim of the Green Bay & Mississippi Canal Co. that is made by their cross-bill in this case?

Objected to. Overruled. Exception.

A. I had not.

Cross-examination.

By Mr. ORDWAY:

Q. When was the Outagamie Paper Co. incorporated?

A. 1887.

Q. And when was the Hewitt water power incorporated?

A. 1887.

Q. And was you the first president of both of them?

A. I was the first president of the Outagamie Paper Co.

Q. When did you become president of the Hewitt Water Power Co.?

A. I am not president; Mr. Hewitt is president.

659 Q. I understood you to say before, in answer to Mr. Hooper, that you were president of both?

A. No.

Mr. HOOPER: The other of the "both" is the Patten Paper Co.

Mr. ORDWAY: When was it that this conversation took place with reference to the incorporation of these two companies?

Mr. HOOPER: It had no reference to the incorporation of either of those companies, but had reference to the commencement of this suit, & took place prior to the commencement of this suit.

Mr. ORDWAY: Did it take place prior to the commencement of this suit?

Mr. HOOPER: Prior to the commencement of this suit.

Mr. ORDWAY: And after they were incorporated?

Mr. HOOPER: No; the Hewitt Paper Co. and the Outagamie Company had no existence at that time.

Mr. MARINER: We do not object to it, except as to the materiality of it.

660 H. J. ROGERS, sworn, testified as follows:

Q. Where did you live from 1883 to 1888?
A. In Appleton, Wis.
Q. What relation did you bear to the Green Bay & Mississippi Canal Co.?
A. I was the vice-president of the company.
Q. Do you know Mr. A. W. Patten?
A. I do.
Q. Did he have an interview with you prior to the commencement of this action?
A. He did.
Q. With relation to what matter about this action?
A. With relation to the employment of you as attorney and in relation to the proper division of water in the channel of the river there at Kaukauna.
Q. Did you have an understanding then as to what division should be claimed?

Objected to as immaterial. Overruled. Exception.

A. We did.
Q. What division or apportionment was there that you understood should be claimed in the action?
A. That the proper division of the water should be one-half on the north side, two-sixths in the middle channel, and one-sixth in the other channel.

661 Cross-examination waived.

Mr. HOOPER: I wish to offer in evidence certified copy of the *lis pendens* with certificate of filing, which is dated on the 4th day of November, 1886. It is conceded that this suit was commenced before the 4th day of November, 1886.
Marked Plaintiffs' Exhibit No. 1.
Mr. HOOPER: We offer the testimony taken before F. Bradford, referee, and reported under certificate dated October 5th, 1892. I also offer what is endorsed here as filed April 7th, 1890, testimony in the main suit for division of water power, etc., before Referee F. S. Bradford, as appears by Bradford's certificate dated April 3rd, 1890.
Testimony read.

Plaintiffs rest.

Testimony of the Defense in or to the Cross-complaint.

662 Mr. CAREY: We offer in evidence the deposition of George W. Lawe taken in the cross-suit, filed in court at Appleton on the 2nd of April, 1892, and it is contained in the roll returned here.
Testimony read.
Mr. ORDWAY: I offer in evidence the deposition of N. M. Edwards

and Edward Ruger, taken before Commissioner Harper pursuant to notice in these two actions on the 6th of Feb., 1893.

Depositions read.

Mr. STEVENS: In behalf of the Green Bay & Mississippi Canal Co. in support of the cross-complaint, we offer excerpt from a report of the minority of the judiciary committee relating to the improvement of the Fox and Wisconsin rivers, made in 1853 and subscribed by James T. Lewis.

Mr. HOOPER: On behalf of defendants in cross-complaint, let it be understood that this all is under objection as to materiality.

Mr. STEVENS (reading from printed case, page 11): "The undersigned beg leave to submit the following statistical information for the purpose of counteracting any influence the statements made in the majority report might have upon those unacquainted with these rivers and the means in the hands of the State for their improvement, and to show the value and feasibility of this improvement and the necessity of adopting measures to prosecute it without delay to its final completion.

663 The Fox river is the largest tributary of the St. Lawrence. Its average width between Green Bay and the foot of the rapid at Kaukauna is half a mile, being at no point less than 700 ft.

The average width of the stream is 40 rods, being at no point less than 450 ft. We have no means of ascertaining the quantity of water discharged, but it is believed to furnish at the different points along the rapids the most extensive hydraulic power to be found within the same compass in any part of the United States."

Mr. STEVENS: I next offer in evidence the report of the select committee of the assembly, to whom was referred so much of the message of the governor as related to the Fox and Wisconsin River improvement, dated March 31st, 1856; signed Joshua Stark, M. M. Davis, and Charles H. Walker. I offer the whole of it and I will read the excerpt which we specially wish to offer in evidence—printed page 29:

"The locks under contract but yet unfinished, consisting of one at Cedar Rapids, five at Grand Kaukauna, 4 at Little Chute, and four at Grand Chute, were required to be stone and timber or composite locks 160 ft. long between gates, 35 ft. wide in the chamber, and to give 5 ft. depth on the miter sills with ordinary low water.

664 This enlargement of the original scale of improvement was adopted in the contract of Gov. Dewey with Morgan L. Martin in 1851 for the locks at the Little Chute and Grand Kaukauna, and was the same year applied by the board of public works to Cedar Rapids and Grand Chute, as appears by their report in Jan., 1852. The lock at Menasha was originally required to be constructed of timber and earth, 140 ft. x 35 ft. in the chamber and 4 ft. in depth of water. The report of the engineer in 1853 contemplated its alteration to correspond with the locks below in case of Reed's failure to complete it as provided by contract.

Basins or reservoirs of about 3 acres each were to be constructed on the short levels between locks 15 and 16 and locks 16 and 17 at

Grand Kaukauna. (See report of engineer in 1852.) A new dam and lock of the enlarged size was to be constructed at the Little Kaukauna; also a dam and lock on the Upper Fox.

Dredging was to be done in the Upper Fox to an amount estimated to require 2 years' use of the dredge, and work was to be done in the improvement of the Wisconsin river estimated to cost $25,000. The Lower Fox was to be made of sufficient capacity to allow the free passage of boats drawing 4 ft. of water and the Upper Fox of boats drawing 2 ft. at ordinary low water. These several works were all contemplated in the report of the board of public
665 works and estimated by the chief engineer on the 1st day of Jan., 1853."

Page 30: "The works at Grand Chute, Cedar Rapids, Little Chute, and Kaukauna are all very nearly completed upon the plan contemplated in the charter. Boats have passed through them during about 2 months of the present year. The lock at Menasha has been built and is now completed upon the enlarged plan."

Page 35: "To this is to be added the value of the improvement itself as a source of revenue and the use of the immense water power created by it."

Page 36: "Your committee are unable to estimate these sources of income, but referring to the exhibit of the company they find them appraised as follows: Estimated value of hydraulic power, $300,000. These are much higher values than either the lands or the improvement could possess in the hands of the State. Experience has proved that under her management the lands produced but ten shillings per acre, while the hydraulic power and improvement revenues were regarded as of mere nominal worth. All funds applied to the prosecution of the improvement or disbursed by the company for any other purpose have been raised upon the credit of the improvement and the grant. No money has been paid upon the capital stock.

"Bonds were issued by the company immediately after its
666 organization to the amount of $500,000, secured by a mortgage purporting to convey the works of the improvement and all the lands granted in aid of its construction, the avails of which bonds were intended to complete the works, pay off the State indebtedness, and equip the company with boats, etc., to commence the business of navigation. Some $40,000 to $50,000 were early realized from the purchasers of pre-empted lands, including the settlers upon the even sections, and the remainder were reserved from sale with the design not to offer them until the improvement should be completed. A few sales have, however, from time to time been made and the money applied to the payment of the interest on the company's bonds and to the general purposes of its organization."

(Page 37:) "Of these bonds $488,000 had been disposed of before the 25th of August last, and your committee were informed by Mr. Martin, vice-president of the company, that a new issue of mortgage bonds has recently been made to the amount of $900,000, intended to cancel the former issue and pay off the State indebt-

edness, the balance to be applied to extinguish the floating debt of the company and prosecute the work to completion."

(Page 47:) "Water rents to date are given at $550.00." After giving estimates of the cost of enlargement the committee proceed:

(Page 54:) "In the above we have estimated the cost of a much enlarged improvement of Fox river, sufficient to secure reli-
667 able 3½ to 4 ft. navigation, which we believe the company are able and ought to be required to make with the additional grant."

Whereupon the committee reports by bill, which subsequently became the act of Oct., 1856. Attached to the report of the committee as an exhibit is the statement of Morgan L. Martin (printed page 60), in which, in reply to the question, "What change was made in the size of the canals?" he says, "The change was an increase of depth to 4 ft. on the whole line from Lake Winnebago instead of the 2 ft. draught mentioned in the charter of the company."

Attached to this report as an exhibit is the report of D. C. Jenne, chief engineer.

(Printed page 76:) "At the Grand Kaukauna there is one dam, five locks, and a section of canal about one mile and ¼ in length. This work is nearly completed, except brushing and graveling the dam and some work to the guard-bank on the east side of the river, both of which are in progress. The gates to the guard-lock or flood-gates have not been finished; also the coping to the same. The coping to two of the locks is not completed; also a small amount of embankment."

(Page 77:) "I confidently believe that when all the work above specified is completed that boats thirty-three ft. wide and
668 140 ft. in length, drawing from 3½ to 4 ft. of water, can safely navigate the Lower Fox, and that the same class of boats, drawing from 3 to 3½ ft. of water, can navigate the Upper Fox. Steamboats of this size and draft will carry from 250 to 300 tons and barges from 300 to 350 tons."

By consent of all parties it is understood that the whole of books, pamphlets, or papers from which Mr. Stevens has read or will read excerpts are offered in evidence, as well as the excerpts read or to be read.

Mr. STEVENS: Now I offer excerpts from the reports of the board of public works appointed for the improvement of the Fox and Wisconsin rivers, the first being dated Jan. 21st, 1850, signed by Estes, Dousman, Story, and Bingham.

(Printed page 9:) "The board have selected and reserved under the law authorizing them to make reservation for commercial purposes the following tracts of land, namely:

(Then follows a description of tracts of land aggregating 3,425 acres.)

(Printed page 13:) "It is important that some provision be made by the legislature at its present session for the use and disposition of the water powers that shall have been created by the improvements now in progress and those that may hereafter be created on

the line of the Fox river. The board have refrained from making any arrangement dependent upon them, as the legislature
669 expressly reserved to themselves all control over them. Had the control and disposition of these water powers been placed in the hands of the board, some advantage would have accrued to the State in the way of obtaining more favorable propositions for the improvement."

Mr. STEVENS: Now, I offer the second board of public works' report, dated Jan. 1st, 1851; signed by Dousman and Story.

(Page 3:) "Proposals were received for the improvement of both sides of the river at these two points" (Grand Chute and Cedar Rapids). "At the Grand Chute Theodore Conkey proposed for the construction on that side of the river of section No. 1, lock No. 4, and the dam, for the aggregate sum of $11,971.25 and the right to all the surplus water for hydraulic purposes. This proposition, if accepted, would have fixed the location of the improvement on the west side, and was submitted to the governor for his approval, which he declined to give, deeming the amount of work proposed to be done by Mr. Conkey of less value than the water power, and the location was changed to the east side and the work allotted to Fitch P. Tallmage, he being the lowest bidder, for the aggregate sum of $56,747.64. The aggregate propositions on the west side of the river, had Mr. Conkey's proposition been accepted, would have been $54,073.61 and all the surplus water for hydraulic purposes,
670 only exhibiting a difference of the sum of $2,674.03; which latter sum would have been the only real equivalent that the State would have received for all the water power at the Grand Chute." "Overtures were made to the board by the agent of some eastern capitalists for making the improvement at the Little Chute and the Grand Kaukauna, the only portions of the work not under contract. The conditions under which they proposed to do the work were the privilege of using all the surplus water for hydraulic purposes, and also the right of collecting tolls under the direction of the State authorities. These conditions were deemed so favorable by the board that they directed the work to be advertised. Previous to the time fixed for receiving propositions, however, Mr. Joshua F. Cox, one of the leaders in the enterprise, died, and consequently the arrangement failed.

It is to be regretted that this contract could not have been consummated, as it would have insured the completion of the improvement at a much earlier period than can possibly be effected from funds derivable from the sales of the lands appropriated for that purpose."

Mr. STEVENS: I offer now the third board of public works' report, dated Jan. 5th, 1852, signed by Croswell, Loy, and Burns.

(Printed page 7:) "On the 3rd day of July the chief en-
671 gineer, under the direction of the board, made a survey of the canal reserve, in which was contained, besides that portion before referred to, 40 acres adjoining the Fox River lock for a basin and an additional quantity on the west side of the same lock to be attached to and form a part of the water power created by the

improvement. For a more particular description of the reservation see appendix to this report, marked (G). (Appendix 'G' described the land, all of which lies near Portage City, on the Fox river.)"

(Printed page 8:) "Encouraged by the liberality of the legislature at its last session in the passage of the act relative to the improvement of the Grand Kaukauna and Little Chute, and knowing the deep anxiety of the people for the early completion of the entire improvement, the board urged and encouraged the contractors to resume their work, which had been suspended for want of the requisite funds, and damage by the elements was in consequence sustained. They were assured in case they would resume that the board in their annual report would recommend to the legislature that the same rate of interest which is allowed in the contract of Morgan L. Martin should also be paid upon the warrants issued to them. At the time of holding out this inducement to the contractors it was supposed that there would be money in the
672 treasury for their redemption before this time." "Soon after the execution of the contract with Morgan L. Martin by His Excellency Governor Dewey, on behalf of the State, by virtue of the act passed at the last session of the legislature, the several sections of the canal and locks at the Grand Kaukauna were located and a large force introduced upon the works. This important operation, from the well-known ability of the contractor to furnish the requisite means, has been prosecuted with great energy and success, and little doubt can be entertained that, if the same industry and zeal shall be continued through another season that have been evinced during the one just past, this portion of the undertaking of Mr. Martin will be completed within a year from this time."

(Page 10:) "The first litigated case for damages which has occur-ed since the commencement of the improvement arose out of the clearing away the obstructions from the line of the canal at the Grand Kaukauna. Three buildings, two of them of large size, were found to be directly on the line adopted. One of them, including the lots upon which it stood, comprised all of the property of the owner, Clark Knight, which was used for a tavern. The terms of settlement could not be agreed upon, and in pursuance of the provisions of the Revised Statutes appraisers were appointed, who awarded the owner the sum of $1,190.00, and the State (or improvement) had the disposal of the building.
673 The house was immediately sold to George W. Lawe for $422.50, and the whole expense to the improvement for the removal of buildings and payment of damages was $815.00."

(Page 11:) "The repairs at the Rapide Croche, which consisted of a spar dam and timber docking with stone filling below the lock, was taken by Mr. Martin under his contract. The law of the last session upon that subject awards to him all the work not already under contract between Green Bay and Lake Winnebago at the prices embraced in the contract with Messrs. White, Resley, and Arndt for the improvement of the Cedar rapids." "For reasons which had their origin in the errors formally committed in locating and

building the improvement, the board concluded early in the summer to call into the service the aid of a consulting engineer, whose high character for scientific ability and whose experience in the construction of works where slack-water navigation had been brought to the greatest perfection had previously been tested and ascertained. We formed this determination with the view of increasing the security of the work yet to be completed."

(Page 15:) "Intimately connected with the navigation at this point is the unfortunate overflow of lands on the shores of the Lake Winnebago, produced by the building of the dams across the two outlets. The secretary of the board was instructed to ascertain
674 the probable amount of damages done by opening a correspondence with the inhabitants residing on the margin of the lake, but sufficient information on this important subject has not yet been received to warrant any expression of opinion in relation to it. The result of the soundings, together with the estimates made by Messrs. Anderson and Day, by direction of the board, in and about Neenah and Menasha channels, with the view of lowering the surface of the water in Lake Winnebago and taking the water from the lands overflowed, are given in detail in their report, marked B & D."

(Page 18:) "The internal resources of Wisconsin, especially those arising from its natural water-courses and from the immense power thus created, are inferior to none in any of the States of the West."

Acting commissioner's report attached as a schedule or exhibit to last report of board of public works (page 40): "It has been clearly ascertained by actual experiment that more water can be supplied from the Wisconsin to the Fox river above the forks or north branch through the Portage canal than usually runs there during an ordinary stage of water. How far this supply will go towards keeping up the surface of the water in the Fox at a suitable stage for navigation, after the dredging of the stream has been completed, cannot, of course, be determined until the return of another
675 season. In the event that it does not keep up the required supply, a dam and lock or a lock at the least may be found necessary to create it."

(Page 16:) "Should the necessary funds to go forward in the work be realized from the sale of lands as early as now anticipated, the board can see no good reason why the completion of the entire line of improvement should be delayed beyond the period fixed for closing the contract with Morgan L. Martin, which, as before stated, will expire in one year from the 1st day of June next."

Acting commissioner's report, page 45: Kaukauna Rapids:

"The work at this point was commenced about the middle of June, 1851, and since then has been prosecuted with great energy on the part of the contractor. A large portion of the canal has been excavated, the protection wall on the upper section more than one-half finished, and the upper lock-pit ready to receive the walls of the lock. From the other lock-pits the earth has been removed and the excavation of the rock will be carried on during the winter, so that it can be confidently expected that they will all be ready early in the spring for the commencement of the building of the locks.

The iron has been all delivered, and the most of it is now ready to be put in the work. A number of hands are now busy procuring and delivering timber for the locks and dam. The dam will be constructed in the course of the ensuing season, and from the
676 present condition and prospects of the work there is every reason to believe that the improvement at this point can be completed and ready for the passage of boats in a year from this time. At the upper entrance of the canal it is intended to place a guard-lock, in order to protect the long line of canal between the dam and the head of the first lift-lock. Though the building of this lock will add to the cost of the work, yet, as it appears so requisite for its safety and protection, and as it met with the hearty approbation of Mr. Day, the consulting engineer, I have not hesitated to add it to the plan of the work. As the distance between locks Nos. 15 and 16 and 16 and 17 is small, it will be necessary to have two basins between them, in order that there may be at all times a sufficiency of water for the purposes of lockage. The basins will each contain about three acres."

(Page 47:) "Menasha: Since the last report but very little additional work has been done at this place. In October last I made, in company with Mr. Day, a preliminary survey at this place and Neenah for the purpose of showing the comparative advantages of the two channels and of ascertaining whether it would be practicable to improve the navigation, either by lowering both dams two feet or by dispensing with their use entirely."

677 Mr. STEVENS: I now offer report of civil engineer on Wisconsin River survey, 1851, attached to third board of public works' report.

(Printed page 57:) "No valuation of the water power resulting from the improvement is here attempted. The quantity may be loosely calculated by supposing the river to average, at the Dells, sixty ft. in width, 30 ft. in depth, with a velocity of 150 ft. per minute; the discharge would be two hundred and seventy thousand cubic feet; below Shaurette rapids, six hundred ft. width, two ft. depth, and one hundred and thirty ft. velocity, one hundred and fifty-six thousand cubic ft., and below Big Bull falls seven hundred ft. width and a half ft. depth and ninety ft. velocity, ninety-four thousand five hundred cubic ft. per minute, an amount probably doubled by each freshet.

"The limited nature of the survey and the difficulty of obtaining the requisite information have precluded an estimate for land and water rights necessary to be procured at the several locations of the proposed work. The presumption is that a portion of the water power caused by its construction will fully compensate the adjacent owners for the use of their soil. The preceding computations with reference to the benefit expected from an improvement of the rapids of the Wisconsin river are entirely based upon the present extent of the manufacture of lumber, the enhanced value by an in-
678 crease of that business and the tendency to enlarge it by at once furnishing a ready mill site and a protection from the

dangers of the river being subjects for a conjecture rather than an estimate."

Mr. STEVENS: I now offer excerpts from consulting engineer's report, exhibit to third board of public works' report.

(Page 62:) "At the Kaukauna: Upon a review of the line of canal round the rapids at this place a guard-lock was added to the original plan of the work. This, although it will add to the cost, will be found a necessary protection in case of a breach in the canal banks between the upper lift-lock and the dam. In case a breach occur-ed in the banks and an open canal from the pool of the dam, the entire bank from the upper lift-lock to the dam would be washed away.

I concur in opinion with Mr. Anderson in regard to the location of the canal. The line is the best that can be had in all respects. The light structure of earth which overlays the rock forming the bed of the river, and the fact that the surface of this rock upon a portion of the distance is about canal bottom, may render it difficult to make a part of the canal tight. This difficulty would not be overcome by changing the line to the hillside, while the amount of excavation required would be greatly increased beyond that necessary to form the canal in order to prevent slides from the hill into the canal."

679 Mr. STEVENS: I offer now fourth board of public works' report, dated Jan. 1st, 1853, signed by Prame, Richardson, and Proudfit.

(Page 11:) "The improvement should be completed the present year, and we believe that with a proper and judicious management of the fund at the disposal of the State, applicable to the object, this can be accomplished.

None doubt the ability or disposition of Mr. Martin to complete his section of the work within the time, under the terms of his contract with the State, or at farthest by the opening of navigation in 1854, and it may be regarded as equally certain that the other contractors will complete their works at an early day, if they can receive their monthly installments in money, according to the terms of their contracts, or such securities as the State is able to furnish through the fund applicable to the purpose, which cannot fail to command in the stock market their par value in money.

The two funds out of which the two classes of liabilities incurred for the improvement are to be paid are, first, the proceeds arising from the sales of lands, and, second, the revenues to be derived from the improvement."

(Page 13:) "For reasons given in another part of this report, we are fully satisfied that if is for the interest of the State not to surrender the Menasha channel as a part of the improvement, as there is no probability that the opposite channel (could it be made
680 equally valuable for the purposes of navigation) will ever be made navigable without great expense to the State."

(Page 15:) "The right to the use of the surplus water at the lift-lock on the Portage canal authorized by law was on the 4th day of October last leased to Joseph Burger for the term of thirty

years at the annual rent of two hundred and seventy-five dollars, payable yearly in advance, that being the highest sum bid therefor."

Mr. STEVENS: I now offer chapter 275 of the Laws of 1850, approved Feb. 9, 1850, entitled "An act to amend an act entitled An act for the improvement of the Fox and Wisconsin rivers and connecting the same by a canal," published in pamphlet of documents of Green Bay and Mississippi Canal Co., page 26.

Also an act entitled "An act to amend an act entitled An act to provide for the improvement of the Fox and Wisconsin rivers and connecting the same by a canal," approved Feb. 9, 1850, chapter 283, published in pamphlet of documents aforesaid, at pages 27 and 28.

Also an act entitled "An act requiring the board of public works to proceed in the improvement of the Wisconsin river and to authorize the selling or leasing the hydraulic power at the lift-lock on the Portage canal," chapter 464, approved April 19, 1852, published in pamphlet of documents aforesaid, at page 37.

Recess until tomorrow at 10 a. m.

681 Mr. STEVENS: At the conclusion yesterday I had offered certain amendments to the board of public works act, and I now will proceed to offer excerpts from exhibits, prospectuses, and reports issued by and to the Fox and Wisconsin Improvement Company as follows:

I first offer the exhibit or prospectus issued by the Fox and Wisconsin Improvement Co. at the time of putting on the market the first issue of bonds, to the aggregate amount of $500,000. It is a pamphlet with maps. The title page of the pamphlet is as follows: "Exhibit of the Fox and Wisconsin Improvement Company on offering for sale $500,000 8 — first-mortgage bonds, August 1st, 1853." A slip bound into the pamphlet is a printed statement over the signature of the president of the company, addressed to Isaac Seamour, Esq., New York, giving certain particulars as to the then present right of the company to additional lands. The second page of the pamphlet gives a statement of the officers of the company, of which Mason C. Darling, of Fond du Lac, was president; Otto Tank, of Green Bay, vice-president; Morgan L. Martin and others, directors; Joseph G. Lawton, secretary; Edgar Conklin, treasurer, and J. Kip Anderson, chief engineer. The following are excerpts from the pamphlet attached thereto:

"The directors of the Fox and Wisconsin Improvement Co., being about to offer for sale $500,000 of 8 per cent. first-mort-
682 gage bonds, submit the following exhibit: (Here follows a description of the Fox and Wisconsin rivers and their relation to each other.) "This proximity of two navigable streams running in opposite directions through the State afforded at an early period a convenient transit from Lake Michigan to the Mississippi river and attracted the attention of the Secretary of War, who in 1838 strongly urged upon Congress to connect them by a canal for the purpose of facilitating the transportation of troops and munitions of war destined for the western frontier of the United States."

(Then follows reference to legislation by Congress and the State legislature, the design and progress of the work, situation and value of the lands, and cost of improvement.)

(Page 12:) "The water powers incidentally created by the construction of this improvement will eventually prove to be one of its most productive sources of revenues and of themselves sufficient to yield a fair percentage upon the total cost of the works. The nine dams and the six miles of canal, along which it is only necessary to erect bulkheads to make the powers available, will afford water sufficient to drive a large number of mills and factories, the volume discharged through the Fox river being equal to a stream
683 200 yards in width, 2 ft. in depth, with a velocity of 8 miles per hour. The power thus created is the only available one to answer the requir-ments of 10,000 square miles of unequalled farming country. An annual rent of three hundred dollars would be a moderate rate for such unfailing power, at which rate it would require but 30 mills to make a dividend of 6 per cent. on $150,000, or 120 mills to afford a similar dividend upon $600,000. It is, therefore, a moderate estimate to value the whole hydraulic power furnished by the improvement at $300,000." (Then follows an estimate of earnings and income.)

(Page 16:) "The income from the lands is estimated at an average of $50,000 per year, and no account is taken of the annual income from the use of water powers nor the profits of transportation of passengers, freight, emigrants, etc., which must be necessarily very large." (Then follows situation of business points, cost of maintaining the work, remarks on sec. 8 of charter.) "The charter, however, is perpetual, all other rights, franchises, water powers, etc., etc., belonging irrevocably to the company." (Then follows explanation of bonds, indenture of trust, etc.)

(Page 18:) "We also ap-end the opinion of eminent counsel as to the validity of the bonds and mortgage and their conformity with the laws of the State. In closing we briefly recapitulate the statement of the value of the securities, etc., hydraulic power, $300,000."

684 Attached thereto are copies of acts of Congress, of the legislature, of the articles of associations of the company, the latter defining the powers of the association and, among others, the right to hold, sell, lease, and occupy any water power granted to or owned by said company, and also copies of the bond and mortgage. The mortgage in question bears date August 1st, 1853, and is made by the Fox and Wisconsin Improvement Company to Isaac Seamour and William J. Averell, in trust for the bondholders. In the resolutions recited in said bond describing the property, corporeal and incorporeal, etc., etc., to be covered by the mortgage is the following: "And the hydraulic power owned and to be owned by this company and all the revenues thereof." This is followed by a written opinion of A. C. Bradley, 62 Wall street, which contains, among other things, the following: "I am of opinion that the said bonds are valid obligations, and that the said mortgage

constitutes a valid and effective lien on all the property and rights of said company mentioned therein. New York, Sept. 5th, 1853."

Mr. STEVENS: I now offer the report of C. D. Westbrook, Jr., *Von* 14, 1853, and is directed to Isaac Seamour and William J. Averell, Esqs., trustees in the mortgage. These trustees engaged this engineer to examine the property and report. It contains, among other things, the following: a description of the rivers, of the legislation of Congress and of the State, and the progress of the work
685 as it then stood. The following is an excerpt from page 8:

"At Menasha the contract was given to Curtis Reed, who agreed to construct it according to the plan then entertained and give $5,000 in addition for the use of the water power. Subsequently it was thought best to enlarge the size of the lock and the canal, to complete which an expenditure of $16,734.40 is required. From this is to be deducted the balance of expenditure, according to the original plan. The water power at this place is so largely used at present and capable of being further extended as to furnish abundant security for the fulfillment of the contract." (Then follows a description of the liabilities of the company and of the lands of the company.)

(Page 12:) "Its water power: This, as may be inferred from what has heretofore been said, lies mainly on the Lower Fox at the different rapids on that stream. There is an additional power from the canal joining the Fox and the Wisconsin rivers, but this has been already leased by the State for the yearly rent of $275. Additional water power can also be created by a dam and lock between Lakes Buffalo and Puckaway, on the Upper Fox, the use of which would probably pay for the improvement. The extent of the water power on the Lower Fox may be judged of from the fall of 170 ft. to its water, as well as from the fact that for the lockage of the improvement itself (at its present capacity) not more than one-tenth part of its water could be used. The balance can all be
686 devoted for the purposes of hydraulic power. The most important use, however, that will be made of the water power on the Lower Fox will be for flouring mills. The immense quantities of wheat that are destined to be collected from northern Wisconsin, Iowa, and Minnesota will be here converted into flour. The very magnitude of the power, however, which is far beyond the wants of even the vast section of country that in time will call for its use, is a difficulty in the way of its immediate profit to the company. That at Neenah and Menasha is in the hands of private individuals, and is of itself more than sufficient to subserve the present wants of the country; but there is another important consideration in estimating the value of the water power in connection with its security for the loan sought to be made in the company. Without the completion of the improvement itself, the water power on the Lower Fox, shared as it is with other parties and difficult of access, could hardly be rated as a saleable article. While estimating its value from the completion of the improvement, it would be found to contribute so small a proportion of its immediate profits as hardly to be worth your attention in the present enquiry. I say this, not

denying the accuracy of the estimates of the company, but meaning that its water power acquires its value after that of the improvement has been established."

687 Mr. STEVENS: I now offer a further report of C. D. Westbrook, Jr., dated Dec. 1st, 1854. This is a pamphlet with large map attached. Its title page is as follows: "Fox and Wisconsin improvement; report by C. D. Westbrook, Jr., Dec. 1st, 1854," and is addressed to Isaac Seymour and William J. Averell, Esqs., trustees of the mortgage bonds of the Fox and Wisconsin Improvement Company. It is based upon a second inspection and examination made by him of the property of the company and was used on the sale of the mortgage bonds by the said Seymour and Averell as trustees. The report gives the design of the work, description of the rivers, plan of improvement, description of the Upper and Lower Fox. The following are excerpts:

(Page 8:) "The Lower Fox: The fall in this stream from Lake Winnebago to Green Bay is 170 ft., principally in eight different rapids. In company with J. Kip Anderson, Esq., chief engineer of the work, I took measurements of the volume of the stream where it passed the ferry at Wright's, 15 miles above Green Bay. The stream at the time was supposed to be at its minimum quantity of water." (Then follows a description of the method of ascertaining same.) "The quantity thus ascertained was 139,236 cubic ft. per minute. This would equal 1,041,540 gallons."

Then follows plan of improvement, work executed and remaining, character of the work, extent of navigation that will be opened by the completion of the work, summary of navigable tributary
688 waters, revenue, legislation of the State and Congress, copy of the bonds and mortgage in trust to Seymour and Averell, description of the lands, and, finally, description of the water power.

(Page 62:) "The magnitude of the water power on the Lower Fox may be calculated from the fall of the stream, which is 170 ft., and the minimum supply of its water, which we have seen is 139,236 cubic ft. per minute. With no other allowance than 5 per cent. for the possible extent of its lockage we should have—

$$(139{,}236 - \frac{139.236}{20} \times 62,33 \times 170 \ldots 33{,}000—)$$

42,471-horse power.

"For a better understanding of its value, we will examine it at the various points where it may be applied as a motive power.

"At Neenah and Menasha the water power has been granted by the State in consideration of the construction of the dams, canals, and locks for the two channels of exit from Lake Winnebago. The enlargement, however, of those at Menasha has since required an additional expenditure by the company. The actual saving of cost

to the company in the construction of these works may be assumed at $40,000 00

"At Depere there is a lockage of 8 ft. Here also the water power was ceded in consideration of the erection of a dam and lock. The saving in cost to the company may be estimated at..... 20,000 00

"Rec. for 18 out of 170 ft. head of water..... $60,000 00

689 "From this data the whole value of the water power on the Lower Fox may be roughly estimated at $500,000.00.

"At the Grand Chute (the next rapids below Winnebago) a crib-work 12 ft. in width on the top, loaded with stone and bolted to the bare rock, reaches from the southerly wing of the dam to the head of the first lock, a distance of about 1,000 ft. This crib-work will sustain a head of 16 ft. of water. It is provided with flumes for milling purposes. The quantity and head of water at this point would yield about 4,000-horse power. Its useful effect, without the allowance of leakage from the dam, would be equal to driving 444 run of stone; that would make 22,200 barrels of flour daily, using 100,000 bushels of wheat. At an annual rent of $100 for the supply of water to each run of stone or an equal quantity for other purposes, and supposing the demand equal to the whole quantity, the revenue would be $44,400 yearly, equal to an interest of 8 per cent. on a principal of $555,000. It is unnecessary to extend the same figures to the other works of the improvement. Suffice it to say that the arrangement of its canals *are* admirably adapted to furnish supplies of water at convenient points for its use. With the exception of that granted by the State, it is all in readiness for disposal immediately upon the opening of navigation; but mark the results of its use. In the calculation of the water power at the Grand Chute we have assumed that $100 would be the annual rent
690 for a supply to one run of stone, which, in view of the large quantity at their disposal, may or may not be required by the company. The quantity of flour that would be made from one run of stone passing through all the locks of the improvement would yield a revenue of $1,125.00 (1,500 bbls. at 7½ cts.). Thus for one dollar of income yielded by the water power for milling purposes over ten dollars would accrue to the company for the transportation of its products. In view of this fact it is easy to see that the most liberal policy pursued by the company in the disposal of their water power will be for them the most profitable. Although the conversion of grain into flour may be attended with little increase to their rates of transportation, yet an increase of population and business would be thereby created, while the use of this water power for general manufacturing purposes would, in the development of the resources of the country, in the transportation of the raw and the manufactured material, and in causing the settlement of a country in which the company have a large interest from the lands which they hold, yield to them returns so large as to render the rental of this power insignificant in comparison. The

result of any estimate which could be made of the value of this water power would at present be more curious than useful. Its amount, however great, would add nothing to the value of the securities of the company, and it is questionable how much the rental
691 required would add to its revenues. In my own humble opinion, it would be as well for the company to take possession of the lands necessary for hydraulic and commercial purposes and hold them open to improvement for certain manufacturing purposes at a cost no greater than their assessed valuation."

Mr. STEVENS: I offer a printed statement addressed to the stockholders of the Fox and Wisconsin Improvement Company by M. L. Martin and Urial H. Peak, committee of directors, dated Dec. 20th, 1854 (page 2 of printed slip): "Grand Kaukauna: Five locks and one guard-lock at the upper terminus of the canal are all complete except hanging the gates. The locks are of stone, faced with plank, with chambers of 160 by 40 feet. The excavation of one lock-pit of rock has also been done the present season. The entire line of canal at this point, one and a half miles in length, was previously completed. Eighty rods of this distance is protected by a guard-wall 16 ft. thick at the base and from 12 to 20 ft. in height. The whole work at this place embraces excavation of earth and cement, 146,137 yards; of rock, 18,057 yards; embankment, 110,000 yards, and of masonry in locks, 13,300 yards, and a guard-wall, 7,132 yards. There is also a spar dam, supported by cribs of stone, constructed across the river near the head of the canal 570 ft. in length and finished the present season. Nothing remains to be done to admit the passage of boats with a draft of 5 ft. of water ex-
692 cept to hang the gates, the materials for which are on hand and being worked in."

Mr. STEVENS: I offer now a copy of a proposed trust mortgage of $900,000 to Isaac Seymour and Abraham B. Clark, trustees, but which was subsequently withdrawn from the market, and which said mortgage was given upon the lands and works of improvement generally: "And the hydraulic power owned or to be owned or acquired by the said party of the first part and the benefits to be derived therefrom," dated July 15th, 1856.

Mr. STEVENS: I offer in evidence report and accompanying documents of the Fox and Wisconsin Improvement Company, dated Dec., 1856, to which is attached the report of Daniel C. Jenne, superintendent and chief engineer, under date of October 22, 1856, and also other documents. We make the following excerpt from this report:

(Page 4:) "The Fox river from Lake Winnebago to Green Bay, a distance of 36 miles, falls 170 ft., principally in eight different rapids. With a minimum volume of 1,041,540 gallons per minute, the extent of the power of the river may be feebly imagined. The improvement company have dammed the river at or near the head of each of the rapids and constructed canals leading into the still water below. Thus, with the completion of the improvement, a water power stretching along the river a distance of thirty miles, with dams and canals ready for use, is furnished, requiring but the

erection of mills and machinery to convert the banks of the
693 Fox from Menasha to Depere into one continuous line of factories and workshops.

With 170 ft. fall and a minimum supply of water of 139,236 cubic feet per minute this stream may challenge comparison with any in the West, if not in the Union, for manufacturing facilities."

(Page 5:) "At the session of the legislature of Wisconsin held in October last an act was passed confirming to this company these additional grants of land, extending the time for completion of the work, and providing for its enlargement by which its capacity will be doubled For the purpose of securing the prompt completion of the works and the payment of any liabilities incurred or hereafter created, it provided that the lands and other property of the company should be conveyed to trustees to be held as security for the faithful performance of all its obligations. The provisions of this act are similar to those of the law organizing the Illinois Central Railroad Company. The company has complied with the requirements of the law and have secured its benefits by executing a deed of trust to Charles Butler and Alexander Spaulding, of New York, and Alexander Mitchell, of Milwaukee."

Then follows the report of D. C. Jenne. This gives the object of the improvement, its present condition and capacity, what its capacity will be when completed upon the new plan, the value of the improvement to the country through which it passes and to the stockholders. The following excerpt is taken from page 11:

694 "*Value of the Hydraulic Power Created by Its Construction.*

"There will be one of the most extensive water powers created by the construction of the improvement that exists at any point on the great chain of lakes or the rivers tributary to them. On the Lower Fox river there is a fall from Lake Winnebago to Green Bay of about 170 feet, and this fall is made available for hydraulic purposes by the dams which have been constructed around the rapids on the river.

At Depere	8 ft.
" Little Kaukauna	8 "
" Rapid Croche	8 "
" Grand Kaukauna	50 "
" Little Chute	38 "
" Cedars	10 "
" Grand Chute	38 "
" Winnebago rapids	10 "
Total	170

At Depere and Winnebago rapids, or Menasha, the water power was sold by the State in consideration of the construction of the dams, locks, and canals at those points, which was equal to about $50,000, or $2,800 per foot fall. Estimating the balance of the

water power in the same proportion, the value would be $425,000. It has been estimated that the quantity of water flowing in this river at low water is about 140,000 cubic ft. per minute.

695 From observation during the past summer I am of the opinion that this is a large estimate. I will assume that after supplying the locks and canals and providing for the leakage of the dams that there is 100,000 cubic ft. per minute available for hydraulic purposes. Multiplying 100,000 by 62½ (pounds to a cubic foot of water) and dividing by 33,000 gives 189 4/10-horse power for each foot fall. This will make the power at each point as follows, viz:

Little Kaukauna	189, 4 by	8 ft.,	equal	1,515-horse	pow.
Rapid Croche.....	189, 4 by	8 "	"	1,515	"	"
Grand Kaukauna.....	189, 4 "	50 "	"	9,470	"	"
Little Chute...	189, 4 "	38 "	"	7,197	"	"
Cedars..... ..	189, 4 "	10 "	"	1,894	"	"
Grand Chute.....	189, 4 "	38 "	"	7,197	"	"
Total...				28,788		

Assuming 10-horse power to be what is required to propel a run of stone for grinding wheat (which is more than the actual power required), and we have a power equal to propelling 2,878 runs of stone disposed of on the Lower Fox.

I think it is a safe estimate that the whole power can be brought into use in the next 10 years, and that it can be leased at an average of $15 per run of stone per year. The income would then be as follows:

Power equal to 2,878 run of stones on the Lower Fox, at $15, $43,170.

696 Power equal to 30 run of stones on the Upper Fox at $15, $450.

Power leased at Fort Winnebago, $275. Total income, $43,895. This would give 10 per cent. per year on a capital of $438,950. I am of the opinion that this hydraulic power will be worth at least half million of dollars."

He then gives a statement of assets, liabilities, and wants of the company, in which he places the value of the water power at $500,000.

(Page 14:) "There can be no question but the improvement and water power will pay all expenses that may be incurred of whatever name or nature, and pay a very handsome dividend on the stock. At the end of twenty years the improvement and hydraulic power will be worth three millions of dollars, and the revenues derived from them will pay a dividend of 20 per cent. on that amount. Whatever is realized from the sale of the lands will be a clear profit to the stockholders."

(Page 17:) "The company has issued its bonds for $1,500,000, payable in 1873, with interest at the rate of 8 per cent., to be paid on the first days of February and August, in the city of New York.

"*Security for the Prompt Payment of the Principal and Interest of the Bonds.*

	1st. Four hundred thousand acres of land, etc...	$2,000,000
697	2nd. The water power belonging to the company which is situated on the line of its navigation, which is shown by Mr. Jenne's report to be worth...	500,000
	3rd. The works, improvements, and all other property belonging to the company...	2,000,000
	Total...	$4,500,000

"All of the above property has been conveyed to Alexander Mitchell, of Milwaukee; Charles Butler and Alexander Spaulding, of New York, in trust, to secure the completion of the work and pay the State scrip of $150,000 and the bonds of the company, which will be used for these purposes. The application of the proceeds of the bonds to the completion of the work will not only increase their security, but will make them the first lien. The deed of trust is like that made by the Illinois Central Railroad Company, the security is greater in proportion to the indebtedness and the rate of interest is higher. The conveyance to the trustees was made in pursuance of the act of the legislature of Wisconsin passed in October last."

Then follows a copy of the deed of trust, which is given at page XVII of the pamphlet, wherein provisions of the act of the legislature referred to are recited, particularly requiring the transfer to the trustees "of all and singular the rights of way, dams, locks,
698 canals, water powers, and other appurtenances of said works, etc., for the uses, trusts, and purposes following, with priority of lien in the order in which they are named—that is to say, first, to secure to the State the faithful application of all moneys or property arising from the sale of lands or water powers or obtained on the faith of the same, as in the said act authorized, to the construction and completion of the works of improvement contemplated in said act, as therein provided, and to the payment of all outstanding indebtedness issued on the part of the State for or on account of said improvement and the interest thereon in accordance with the terms of said act;" and further reciting (page 18) "that the payment of said bonds shall be secured by the deed of trust aforesaid of said lands, works, water powers, property, and franchises, as in the said act provided," etc.

(Page 20:) "Whereby in consideration of the premises," etc., "the party of the first part doth grant, bargain, and sell unto the said Alexander Mitchell, Charles Butler, and Alexander Spaulding" "all and singular the rights of way, dams, locks, canals, water powers, and other appurtenances of said works, and all rights, privileges, and franchises belonging to said improvement."

Then follows a pamphlet entitled "General Statement of the Fox

& Wisconsin Improvement Company," prepared and in-
699 spected by Daniel C. Jenne, chief engineer and superintend-
ent, supposed to be issued at or about the year 1857. The following excerpt is from page 1 of the printed statement:

"Water power."—"From Winnebago lake to Green Bay the Lower Fox river falls in rapids at seven different points 170 ft. in a distance of thirty-five miles. * * * Manufacturing has commenced and is rapidly increasing on the line of the improvement. With 170 ft. fall and a minimum supply of more than 100,000 cubic ft. of water per minute, this stream is unsurpassed for manufacturing purposes by any in the Union. If the water powers are leased for low rents they will give a large income in the aggregate and create an immense commerce upon the improvement."

Then follows report and accompanying documents of the Fox and Wisconsin Improvement Company of Jan., 1858. Its title page is as follows: "Report and accompanying documents of the Fox and Wisconsin Improvement Company, January, 1858." The property of the company consists of lands, water power, and channel of commerce.

The following excerpt is from page 2 of the pamphlet:

"Water power."—"From Winnebago lake to Green Bay the Lower Fox river falls in rapids at ten different points 170 ft. in distance of thirty-five miles. This makes an inexhaustable hydraulic power
at the dams and locks of the company, at which all steam-
700 boats touch. The company is prepared to sell or lease water
power and to furnish ample sites for mills and factories upon lands it has bought for that purpose. The abundance of building stone and timber makes the erection of such establishments very cheap. Manufacturing has commenced and is rapidly improving on the line of the improvement. With 170 ft. fall and a minimum supply of more than 100,000 cubic ft. of water per minute, this stream is unsurpassed for manufacturing purposes by any in the Union. If the water powers are leased for low rents they will give a large income in the aggregate and create an immense commerce upon the improvement."

This report is signed by Morgan L. Martin, vice-president, and Ab'm B. Clark, ass't sec. and treasurer. To this is attached the report of D. C. Jenne, chief engineer and superintendent, dated Jan. 15, 1858, in which, at page 7, he says:

"In the annexed table marked No. 1, * * * in No. 2 an estimate of receipts from tolls, sales, and leases of water power and expenses of operating the improvement for the next 12 years, which is respectfully submitted. Daniel C. Jenne, chief engineer and superintendent."

"No. 2, an estimate of the amount of money which will be realized from tolls collected on the improvement during the next
701 twelve years, together with an estimate of the expenses of
maintaining and operating the same for the above length of time; also an estimate of the amount of money which will be received from the sale and lease of water power connected with the works of said improvement during the next twelve years:

Receipts from water power, 1858		4,000
" " " "	1859	8,000
" " " "	1860	12,000
" " " "	1861	18,000
" " " "	1862	24,000
And so on to 1868		30,000
Total receipts		$310,000"

To this report is also attached the report of Nelson K. Wheeler of Jan. 1st, 1858, at the foot of which are estimates of resources for 1858; tolls and water rents, $44,000; for 1859, tolls and water rents, $68,000, etc.

Then follows a report of the directors of the Fox and Wisconsin Improvement Company to its stockholders, Feb. 1, 1859. The following excerpts are from the pamphlet report, page 4:

"Water power."—"On the Lower Fox river, between Lake Winnebago and Green Bay, a distance of thirty-five miles, there is a fall of one hundred and seventy ft. Lake Winnebago, which is thirty miles long and seven miles wide and at ordinary water has
702 a surface of two hundred and ten square miles, is the reservoir or mill pond of this great water power. By means of the dams and locks of the improvement company this fall of one hundred and seventy ft. is made available at nine different places, at three of which it has heretofore been sold and occupied by manufacturers, viz., at Neenah, Menasha, and Depere. The head and fall and power at the six other places are as follows:

At Little Kaukauna,	8 ft. fall,	1,515-horse	power.
" Rapid Croche,	8 ft. "	1,515 "	"
" Grand Kaukauna,	50 " "	9,470 "	"
" Little Chute,	38 " "	7,197 "	"
" Cedars,	10 " "	1,894 "	"
" Grand Chute,	38 " "	7,197 "	"

Such water powers in a wheat-growing country cannot fail to be of great value, not only for what they will sell, but also for their influence upon the prosperity of the country in which they exist and in making articles for transportation.

Various estimates have been placed upon this water power, ranging from $350,000 to $500,000. The true policy of the company would seem to be that the power should be leased rather than sold."

And under the head of resources, at page 7, the following:

"Water powers."—"On the Lower Fox river, between Winnebago lake and Green Bay, a distance of 35 miles, there is a fall of
703 170 ft. Lake Winnebago, 30 miles long and 7 miles wide, is the mill pond for the great water power which is distributed along the river at six different points, as follows:

At Little Kaukauna,	8 ft. fall,	1,515-horse	power.
" Rapide Croche,	8 ft. "	1,515 "	"
" Grand Kaukauna,	50 " "	9,470 "	"
" Little Chute,	38 " "	7,197 "	"
" Cedars,	10 " "	1,894 "	"
" Grand Chute,	38 " "	7,197 "	"

Such water powers in a wheat-growing country cannot fail to be of great value, not only for what they will sell, but also for their influence upon the prosperity of the country in which they exist. It is proposed not to sell but to lease the water power, which has been estimated heretofore as ultimately worth from $350,000 to $500,000."

Recapitulation.—"Rescources and water power valued at $3,523,000." "All of the above property has been conveyed to Alexander Mitchell, of Milwaukee; Charles Butler and Alexander Spaulding, of New York, in trust to secure the completion of the work to pay the State 12 per cent. and the 8 per cent. bonds of the company."

This report is signed by John F. Seymour, president. To this report is attached the report of the superintendent and engineer, Daniel C. Jenne.

704 Mr. STEVENS: I now offer report of the Fox and Wisconsin Improvement Company, dated August, 1862. The names of the directors of the company are given in this report, and the trustees under the $500,000 mortgage are all given. The title page is entitled: "Report of the Fox and Wisconsin Improvement Company, August, 1862." On page 4 of this pamphlet, after making statements as to the land, is the following:

"In addition to these resources are water powers of great value, but, as it is impossible to place any definite estimate upon them which will not be mere guess-work, they are rated in the cost of the locks and dams which make them. The amount expended by the State of Wisconsin prior to its cession of the works

of the company appear- to have been	$428,855 93
By the company to August 1, 1856.....	504,806 06
From Aug. 1, 1856, to Aug. 1, 1862.....	266,858 00
Making a total of.....	$1,200,519 89"

The following is an excerpt from page 8:

"Thus, if the stock and bond holders will now come forward and take up the 12 per cents and complete our work, all of which can be accomplished with $200,000, they will not only receive more than 7 per cent. on their advances, but they will also save all their lands, amounting to over 400,000 acres, and all their works and
705 water powers, which have cost a million and a quarter of dollars. No stockholder can examine these works without the conviction that there is a value in them over and above the bonds. We believe the 12 per cent. bonds can be bought for the principal only."

(Page 9:) "Judgments for more that $50,000 have been obtained against the company. From the largest of these, which is in favor of Morgan L. Martin for $43,000, we have appealed. By the deed of trust these judgments come in after the 8 per cents. bonds, but they may compel the 8 per cent. bondholders to decide whether they will or will not take the securities provided for their bonds."

Attached to this report is the report of the land department to

the president and directors of the company. The following is an excerpt from page 12 of this pamphlet:

"Water powers.—Any valuation which I might place upon these powers would be speculative. They cannot be estimated until the country is more fully developed. They are the best in the State, and, as far as I can learn, equal to, if not better, than any in the United States. Hitherto a few have been leased at nominal rates to induce settlers to come in and occupy them; but the completion of
706 the railroad to Green Bay will prevent any further lease of that sort by adding largely to their value and giving access to them in winter as well as summer.

There is a fall from Lake Winnebago to Green Bay of about 170 ft., and this fall is made available for hydraulic purposes by the dams which have been constructed around the rapids on the river.

At Depere.....	8 ft.,	equal to	....	horse	power.
" Little Kaukauna.....	8 ft.,	"	"	1,515	"	"
" Rapide Croche.....	8 "	"	"	1,515	"	"
" Grand Kaukauna.	8 "	"	"	9,470	"	"
" Little Chute.....	38 "	"	"	7,197	"	"
" Cedars.....	10 "	"	"	1,894	"	"
" Appleton	38 "	"	"	7,197	"	"
" Menasha and Neenah	10 ft.			....	"	"
	170			28,788	"	"

At Depere and Menasha the water power was sold by the State in consideration of the construction of the dams, locks, and canals at those points.

There are already at Neenah, 7 mills and 3 at Menasha which turn out 1,000 barrels of flour per day, and also a pail factory and several barrel factories.

At Appleton there are 4 mills capable of turning out 450 barrels per day. They average not more than half that; a barrel, spoke, and hub factory, and a tannery, paper mill, and a woolen factory.

There is a flour mill at Kaukauna, and a new flour mill at
707 Little Chute will be ready for business this fall. The mills between Lake Winnebago and Green Bay can make 2,000 barrels of flour per day.—Robert Smith, agent for trustees."

Also attached is the report of the engineer and superintendent addressed to the president and trustees of the company.

Mr. STEVENS: We now offer in evidence the judgment of foreclosure of the trust deed, dated Feb. 4th, 1864, which was entered in the suit of Spaulding, Butler, and Davis, trustees, against The Improvement Company *et al.*

Objected to as immaterial. Taken subject to the objection. Exception.

Mr. STEVENS: In connection with the deed I offer Schedule G, which is really part of the judgment.

Excerpt from Schedule G read.

Mr. STEVENS: I also offer report of E. H. Ellis, found in canal Co. documents, page 121 A.

Mr. STEVENS: I offer report of E. H. Ellis in the same case, found in canal Co. documents, page 121 S.

Objected to as incompetent, immaterial, and hearsay. Taken subject to the objection. Exception.

Mr. STEVENS: I offer the trustees' report of sale in this same suit, which is given at length in canal Co. documents, page 122.

708 We offer this for the purpose of showing that all of these water powers, by the description which I have given, were in form sold and the full proceeds applied to the improvement, and the full proceeds were just sufficient to complete the work of improvement, pay the State debt, and pay nothing at all upon these bonds which have been spoken of.

Mr. STEVENS: Then I offer the request to have the property deeded to the canal Co., given in canal Co. documents, page 135; also Exhibit S, page 136; also Exhibit T in that document, page 137. I offer the order of confirmation, given at page 137 and following in that book of documents; also offer the articles of association, given at page 141 of the documents; also the report of the distribution of the proceeds of the sale, given at page 141 of the documents; also the confirmation of this report, given at page 148; also the deed given to the canal Co., at page 150 of these documents.

Mr. STEVENS: Now, I offer the contract between Curtis Reed and the board of public works, which is given at length in these documents, page 179. I will also offer the act of the legislature, chap. 277, of Feb. 9, 1850, an act entitled for the relief of Joshua F. Cox. I call attention to the fact that the second board of public works' report, page 1, shows that Conkey was the owner of the land on the west side and Talmadge on the east side of Grand Chute.

Mr. STEVENS: For the purpose of showing the early use

709 of these rivers I now read from an address recently delivered before the Historical Society by Prof. Frederick J. Turner. It is published in the 36th annual meeting of the Historical Society, and it is entitled the Character and Influence of the Fur Trade in Wisconsin, showing the use of these rivers in an early day.

Mr. MARINER: There are places throughout the testimony where we have cross-examined witnesses. If we had proceeded regularly, it would be in. Now, if these depositions are not read we have got to go through them and pick out those parts of them that are material to us.

COURT: It was understood, Mr. Mariner, that the reading should be dispensed with, but they are received in evidence, and any part may be read to the court during the course of the argument.

Mr. CARY: It was all offered yesterday.

Mr. HOOPER: And I suppose we understand, further, that if either party refers to something in the argument and he is challenged that it is not in evidence he may have the opportunity of reading it in evidence.

Counsel all assent to the above.

Mr. HOOPER: We don't remember whether we have offered it or not, but we offer the report of the arbitrators, fixed upon to determine the value of this improvement, between the canal Co. and

the U. S., made to the Secretary of War and dated Milwaukee,
710 November 15th, 1871; in connection with that the agreement of Morgan L. Martin, attached to it, dated the 26th of August, 1874; in connection with that the report of D. C. Houston, major of engineers, to Brig. Gen. Humphreys, dated Feb. 26th, 1872; also the report of the Sec'y of War to the House of Representatives, made March 18th, 1872.

Mr. STEVENS: Let this all be taken subject to my objection as immaterial. I would like to offer in connection with the offer of Mr. Hooper some of the testimony that was given on the arbitration proceedings at that time, a certified copy of which Mr. Ordway has. I give you all of the testimony on the subject of water powers given by Morgan L. Martin.

Mr. Ordway objects unless the certified copy is produced.

Offer withdrawn for the present.

Mr. ORDWAY: In cross-suit on the part of the Kaukauna Water Power Co. and defendants Hewitts, now I read from Mr. Martin's testimony in the case of The Green Bay and Miss. Canal Co. against the Kaukauna Water Power Co. It is found on page 81 of the printed case which first went to the supreme court in that litigation: "From the time the Fox and Wisconsin Improvement Company organized, in 1853, until after I finished building this dam, this Kaukauna dam, I was in charge of procuring privileges or right of way and the settlement of damages for that company; no-
711 body else that know of. I never paid Beardsly any damages for any privilege upon land over against the dam."

(Mr. Ordway adds that that refers to land on the south side of the river, over against the southern end of this same dam we are talking about now, but it is not directly pertinent to this mat-er just now.)

Objected to as irrelevant and immaterial. Objection overruled. Exception.

Under the same objection, ruling, and exception he, Martin, said: "I don't remember of ever receiving any deed from Beardsly or any written instrument authorizing me to put the dam or any embankment on lot 5 or of having any negotiations with Beardsly about the matter. I don't recollect of any such negotiations. If I made arrangements with Beardsly, the papers must be on file in the office of the company. I have no recollection of any such transaction."

Beardsly was the owner of the land in fee at the south end of the dam at the time this refers to the building of that dam.

Under the same objection, ruling, and exception he, Martin, further testified: "I have no recollection of taking any proceedings for condemnation of any privileges on or right or interest in the land at the south end of the Kaukauna dam. I did pay damages to Lawe for the flooding of his bridge, which was located immediately above the dam which I built at Kaukauna. I don't
712 recollect of paying anybody else damages at that point except Lawe and Hunt, damages for Lawe's bridge and Hunt on the south side. That bridge was built after I made the arrangement with Lawe, a long time after I made the arrangements with him

for right of way on the north side. That on the north side was in 1851 and this with Hunt in 1854." ("Hunt" refers to an arrangement made for the water right on the bank of the river just above the dam on the south side.)

Mr. MARINER: There was no arrangement made for the water right there.

Mr. ORDWAY: So far as I understand, there was an absolute easement of the whole water front from near the south end of the dam, extending in wedge form up to and across Hunt's land.

Mr. HOOPER: I think I have copies of that document here, and that will save any further dispute.

Mr. ORDWAY (continuing the reading of Martin's testimony): "My connection with the improvement company in relation to this dam and embankment ceased in 1856, when I surrendered my contract; the books of the company will show. I have no recollection of Jenne's map. Westbrook was engineer in my time. I know of no line visible on the land over against the south end of the Kaukauna dam which indicated the extent of the possession which was supposed to be taken there by the State or by the Fox and
713 Wisconsin Improvement Co. There was no fence built to show it. I don't think that the State or improvement company had any possession on the south shore of the river except the dam and embankment.

Under the same objection, ruling, and exception he, Martin, said: "I don't recollect of receiving any deed or release from anybody there at Kaukauna except Hunt. Lawe's bridge was paid for afterwards. The building of the dam set the bridge afloat, and we had to pay for it. Lawe built that bridge and owned it—an individual enterprise."

On cross-examination he testified. (This examination so far had been on the part of our side, defendants in that suit. Mr. Martin was then cross-examined by either Mr. Stevens, or Mr. Hooper, or Mr. Mariner.) This cross-examination is now read by the defendants in cross-complaint, subject to same objection and exception: "When I built that embankment I did not find any lines staked out."

Mr. ORDWAY: The Hunt release referred to in the testimony of Mr. Martin is as follows:

"For and in consideration of $100.00 to me in hand paid, the receipt whereof is hereby acknowledged and confessed, I hereby, for myself, heirs, executors, administrators and assigns, release to the Fox and Wisconsin Improvement Co. and their legal representatives, the right to erect and forever maintain an embankment of the dimensions as surveyed by the engineer of said company, reserving the right to myself to use said embankment when completed but not so that the same shall be injured, through 6 and 7
714 in section 22 of township 21 north of range 18 east on the east side of the Fox river. Also the privilege of excavating a ditch along the south or east side of said embankment not exceeding three feet in width upon the south or east side of said survey and stakes as set by said engineer."

Mr. HOOPER: That instrument was recorded in the office of the register of deed- about the time of making it.

Mr. CARY: This instrument was acknowledged Oct. 6th, 1854.

Mr. ORDWAY: With reference to that release, I will state that it at least conveyed an interest in the embankment extending to the center of the river, which passed from Mr. Hunt to the Fox and Wisconsin Improvement Co., and the right to maintain that bank and to flow the Hunt land from the dam up to the upper upstream end of it. That is all that I stated in the first place, that it was a conveyance of an easement on the south side of the river for the purpose of a pond.

Now I will read a little testimony in this same case applied to and showing the right of the Kaukauna Water Power Co. and the extent of the right in and to the rapids and the fall of the river below the Government dam. I read from the testimony found on page 68 of the same printed case referred to before by me. N. M. Edwards testified as follows: "I should suppose the whole canal of the defendant (that is, the Kaukauna Water Power Co.) on the
715 south side and bulkhead and walls of the dam connected with it cost, say, $150,000.00 to $200,000.00—a rough guess."

On cross-examination he said: "From 3,500 to 4,000 horse power of water is furnished by the Government dam at Kaukauna, taking the fall down at the first lock of the canal, provided all the water was carried through the Government canal. They have used on the Government side at Kaukauna up to the present time 1,200 to 1,500 horse power. I don't know how much the defendant has used on the south side."

On redirect examination this witness testified as follows: "The upper lock of the Government canal is 2,300 feet below the head of the canal. There is a pretty sharp fall part of that way. I figured the head at the upper lock at 12 to 14 feet below the bridge. Right at the head it is nine feet or eight and — half, and the whole flow gives from 2,500 to 2,700 horse power there."

Mr. ORDWAY: The witness Edwards testified that at the time of giving his testimony there was only in use by the canal Co. on the north side from 12 to 15 hundred horse power, and it referred to the water in use at the time of the trial and the taking of that testimony, which was quite recent.

Mr. MARINER: It was in 1883 or 1884.

Mr. ORDWAY: Yes, sir; take it that way. It was quite recent. I will supply that date later. It was July, 1886—see page 40 of said printed case—and that the amount at that time was less than
716 half the whole flow of the river, the larger part of which had been put in use by the canal Co. within a very short time—two or three years next before the taking of this testimony. Canal company never used any water until 1868–'9 out of this canal. It was organized in 1866 and made its first leases to Reuter and Jannsen in 1868, and one of them in 1869, of small amounts, 50 or 100 horse power.

Mr. MARINER: But the Fox and Wisconsin Improvement Company——

Mr. ORDWAY: Never leased any. I think I can give it to you that the Wisconsin & Fox Improvement Co. never leased a horse-power; but while the Fox and Wisconsin Company was in the hands of its trustees, which took place shortly after its organization, the first lease of water power that was ever made by the Fox and Wisconsin Improvement Co. at Kaukauna was made to Cord & Grey for 100-horse power for substantially nothing. The State of Wisconsin never leased any before 1853, before it conveyed to the Wisconsin & Fox Improvement Co., through its board of public works or otherwise, any water from what we call the Government canal.

Mr. STEVENS: At Kaukauna?

Mr. ORDWAY: Yes, sir; at Kaukauna.

Mr. MARINER: Now, if you will add to that statement that the Fox and Wisconsin Improvement Co. and the State and
717 the Green Bay and Mississippi Canal Co. have leased all the water they could at any time.

Mr. ORDWAY: I suppose that is true; they had a natural interest to do so. It has been so stated in every case we have had.

Mr. ORDWAY: I wish to read a little from the opinion of the supreme court in this former case, 70th Wis., p. 657: "We do not here determine the relative rights of the plaintiff and other riparian owners below the dam in respect to the use of the water which would run over the dam if not taken from the pond into the canal, nor do we consider whether there is any restriction upon the manner or place in which the water shall be returned to the river below the dam. We only hold that the plaintiff owns the surplus water created by the dam, and that the defendants have no legal right, without the consent of the plaintiff, to draw water from the pond with which to propel machinery."

Mr. STEVENS: Mr. Ordway, you were to give us some title papers showing the acquisition of these lands by your company, and we wanted to offer in connection with them a plat of the Governmental survey down there showing those strips of land. You were to give us the several deeds under which you acquired you- title in an early day.

Mr. ORDWAY: I don't recollect of any requisition ever made upon me of that kind. It is not in any way embar-assing to pro-
718 duce them. I think they are all stated in the testimony already in this case.

Mr. STEVENS: I think the testimony only shows two or three deeds, but it don't go back through these divided ownerships during those years.

Mr. ORDWAY: You may state to the court what you understand about it, and Mr. Cary and I will listen to it.

Mr. STEVENS: Our understanding is that those lands were originally surveyed out on the south side of the river, in what we call "French claims," being a few rods on the river and extending back a great distance.

Mr. CARY: 25 rods front.

Mr. STEVENS: And that they were held in separate ownerships,

which were gathered up by your company (Kaukauna Water Power Co.) about the year eighteen hundred and something. These strips of land were a certain number of arpents front on the river and eight of them to the mile, and Mr. Cary says they are indicated on the map marked Plaintiffs' Exhibit "A" 1. There are about 8 of those strips to the mile.

Mr. CARY: There are 8 of those fronting on the river in section 21, and in section 22 there — 8 of them fronting on the river.

Mr. STEVENS: And section 21 and 22 cover all of the lands in controversy on the south side of the river.

Mr. CARY: Well, now, I don't know about that; that is another thing. I don't know. I think the Kaukauna Water Power Co. owns lands on the river below section 21; that is my recollection.

719 Mr. STEVENS: Well, that all of the lands in controversy on the south side of the river were originally surveyed into French claims——

Mr. CARY: That land south of section 21 I don't think is surveyed in that way.

Mr. STEVENS: You mean east of section 21?

Mr. CARY: East of 21.

Mr. STEVENS: Well, the lands east of 21 are lower down the river. Now, Mr. Cary, I want this statement, that these separate claims were separately owned for a long time.

Mr. CARY: I don't know, sir.

Mr. STEVENS: Well, your chain of title would show and we would like that if you have it.

Mr. CARY: I cannot admit that fact now.

Mr. STEVENS: Well it was admitted that you would show your chain of title.

Mr. Cary states that he will furnish abstract of title of the lands claimed by the Kaukauna Water Power Co. after the case is submitted to the court the same as if it was offered at this time.

Mr. STEVENS: I want to offer chapter 572 of the Private and Local Session Laws of 1866 for the purpose of showing that the legislature authorized the company to enlarge the work of improvement so as to make a ship canal or something equivalent to that from the lake to the Mississippi river.

720 Recess until two o'clock.

2 O'CLOCK P. M.

The parties agree that by the fair result of the testimony in the case the natural flow of the river in the different channels was as follows: $\frac{43}{200}$ in the south channel, $\frac{62}{100}$ in the middle channel, and $\frac{95}{100}$ in the north channel, provided that this agreement shall be subject to whatever decision the court may make upon the issues raised by the answer and cross-complaint of the Green Bay and Mississippi Canal Co. and the several answers thereto.

Mr. HOOPER: It is admitted and agreed that when the agreement was made between the board of public works and Curtis Reed to build the canal at Menasha he, Curtis Reed, was largely interested

and the beneficial owner of a large part of the village plat of Menasha. I offer a contract in evidence between the Fox & Wisconsin Improvement Co. and Charles Doty, Harrison and Curtis Reed, dated the 24th of July, 1855, and found in Canal Co. Documents, page- 162, 163, and 164.

Mr. CARY: I will read from the statement of facts agreed upon before Referee Bradford, September 29, 1892, by the counsel in this case. The following stipulation was made (page 4 of stipulated facts): "It is admitted for the purposes of this action that the United States, being the owner of lot 5, section 22, township 21 north, of range 18 east, sold the same Sept. 1st, 1833, to one
721 Garret V. Dennison by duplicate which he assigned to Joshua Hathaway, Jr., who received a patent from the United States therefor, which bears date August 10th, 1837, recorded in volume 2 of Deeds, page 206, in the register of deeds' office of Outagamie county, who conveyed to Samuel Beardsley by warranty deed dated April 26, 1836, who held the title till his death, May 7th, 1860; that his heirs conveyed said lot to Steven Frisby Oct. 16, 1871, who conveyed his title to said lot through several mesne conveyances to the defendant The Kaukauna Water Power Company on the 14th day of May, 1880. It is admitted that the plaintiff made the conveyance to the United States of America, a copy of which is annexed to the answer of the Green Bay & Mississippi Canal Co. in this case.

Mr. HOOPER: I offer a part of the deposition of George Lawe as follows:

"(By Mr. ORDWAY:)

Q. What did Morgan L. Martin claim to you at or before December, 1851, as to the ownership of the water power which was to be created on the canal where the bulkheads, mentioned in his bond to you, were to be put in?

Objected to by Mr. Mariner on behalf of canal Co. as to what Martin claimed as immaterial. He was no officer of the State, no member of the board of public works, and had nothing to do in regard to this work except he was a contractor to construct it at the date of these deeds.

722 COURT: I think the answer to that question shows still more that the question is an objectionable one. The court is of the opinion that that testimony is incompetent. The testimony may go in as read from the deposition, with the statement that the court is of opinion that it is incompetent.

Exception."

723 Mr. Ordway, on behalf of defendants in the cross-complaint, also read in evidence, subject only to objection of immateriality of the plaintiff in said cross-complaint, the following testimony of Morgan L. Martin, upon cross-examination of Mr. Mariner, upon the trial of the action of The Green Bay & Mississippi Canal Company against Henry Hewitt, Jr., William P. Hewitt, Peter Reuter, and Alexander Reuter, tried in the circuit court for Outagamie county and afterwards appealed to the supreme court of the State

of Wisconsin in the year 1884; which testimony so read is found on pages 110, 120, and 121 of the printed case upon said appeal.

From page 110: "The records of the old board of commissioners appointed by the governor of the State I recollect distinctly. I myself got a written permit from Lawe and I think from Grignon and perhaps from other parties. The permits of Lawe and Grignon refer to Kaukauna particularly. * * * It strikes me I have seen them recorded in the books kept by the board of commissioners, at Oshkosh. Those books were, on the formation of the company, turned over to the company by the governor in 1853. I don't think there was any condemnation anywhere. Whenever there was damage claimed the amount was agreed upon and paid. I think that was the case at the Cedars. I know it was at Little Kaukauna. At Little Chute I owned part of the land and balance was owned by St. Louis. Perhaps a small portion of the canal
724 run on the land of Grignon. How they were settled with I don't recollect. I was accustomed whenever claims for damages came up to settle them some way or other as long as I was superintendent of the company. I never had any condemnation or law suit that I know of.

Ques. Mr. Hooper thinks there were condemnation proceedings at Little Chute by the board of public works.

Ans. There may have been. The reason why I thought there must have been a compromise or settlement with St. Louis and Grignon, at Little Chute, was when I commenced work under my contract there never had been anything done there at all. There never was a stroke of work done there until I began. I charged the company nothing for going through my land, but think something was paid to St. Louis and perhaps to Grignon."

Pages 120, 121, on same cross-examination, Mr. Martin testified, in response to Mr. Mariner's question:

"Ans. I had the contract with the State for the construction of the work at Kaukauna. I think my contract was dated some time in May, 1851, and the transaction with Lawe was some two or three months afterwards. The work was completed under my contract.

Ques. What did you do there at Kaukauna other than was required to be done by that contract?

Ans. I procured for the State the right of way through Mr. Lawe's land and through Mr. Grignon's, who, I think, owned all the
725 land over which the canal was to be constructed. I am not aware of having done anything else.

Ques. Was your original contract with the State varied at all?

Ans. It was varied by the board of public works in regard to the size, I think, of the canal and the size of the locks; I don't recollect anything more.

Ques. In regard to this contract between you and Lawe, at the time Lawe conveyed to you an interest in this property, what was the arrangement between you and him?

Ans. I had talked with Lawe about the right of way across there, and he objected to the canal going through there on account of its

destroying his property; he had the most valuable part of his tract there, and that he occupied was exactly where the canal wanted to run, very near his house and through an orchard that he had there and between the house that he lived in and another house that he owned on the other side of the canal and which, I think, came on the tow-path within the limits of the right of way that he was to grant, and I undertook to persuade him that inasmuch as he owned the land there that if the canal was constructed through there it would make a valuable water power, which would belong to him. That was the theory that was understood to be the law at that time, that whoever owned the land the water power belonged to them. They could not, of course, interfere with navigation or the use of the water belonging to the owner of the land, and he proposed to me that if I would guarantee the thing, give him my per-
726 sonal bond, that he would convey one-half of it to me, and did so, and the State never paid anything for the right of way either to him or anybody there.

Ques. Was there any conveyance made of the right of way to the State there?

Ans. None, except, I think, a very short lease or license, which was returned to the board of public works and I think recorded in their books.

Ques. What did you do under that contract of indemnity to Mr. Lawe?

Ans. I did nothing. I never paid the State anything except that the State got the right of way for nothing."

727 Mr. Mariner reads on behalf of the Green Bay & Mississippi Canal Company from the cross-examination of Morgan L. Martin (by himself, Mariner), page 84 of the transcript of record in the supreme court of Wisconsin, in the case of Green Bay & Mississippi Canal Company *vs.* Kaukauna Water Power Co.:

"Nobody that I know of made any claim of damages at Kaukauna besides Hunt and Lawe. I don't recollect anybody else. The board of public works was the proper authority for obtaining rights of way and settling damages as long as the State was doing the work, and what they did I don't know. I think they acted for themselves. I was one of the parties to give a release of all claims and demands against the State when this improvement was turned over by the Staie to the Fox & Wisconsin Improvement Company and one of the parties to give the bond provided in the act. I made the release to the State within ninety days."

And from the same page:

"Before my contract with the State was made Alton went over the work as engineer; Anderson was his assistant and * * * a Pennsylvania man, sent by the United States. There was a location made of this Kaukauna dam and canal at the time I commenced. The first survey was whether the canal should be built on the north or south side of the river. Then the engineer designated the land, made a survey of the route of the canal, got the

lift, and the contractor went to work under his direction. I
728 built the Kaukauna dam under the contract I made with the State in 1851 under the terms of that contract. I did it for the Fox & Wisconsin Improvement Company."

And he further read the testimony of John Stovekin from fol. 129 of the printed case of The Green Bay & Mississippi Canal Company *vs.* Henry Hewitt *et al.:*

"I live at Kaukauna and have lived there since 1866. I originally engaged in the flouring business there; since then saw-mill and paper business. I know the seven and a half acres tract in question, and I have known it ever since I went there (being the same tract that was subdivided into lots by the Fox & Wisconsin Improvement Company, as shown on Jenne's map). I understood that it was assessed to the plaintiff. At the time I went there I was the only occupant of it or any part of it, except that there were one or two houses on it that were occupied by lock-tenders."

And also from the testimony of Henry Frombach from the same record, page 51:

"I live at Kaukauna; am a paper manufacturer. I know the strip of land between the canal and river on which there are mills at Kaukauna. I knew it as early as 1873. I was on some land in 1868. John Stovekin was the only one that was in 1868 manufacturing on that tract; he had lot three, with a flouring mill on it at that time, and was building a saw-mill on, I think, lot six."

729 *Statement Prepared by Mr. Ordway on Behalf of All Defendants in Cross-complaint.*

The title to the lands bordering the south channel of the Fox river owned by the Kaukauna Water Power Company, a statement of title to which was asked for by Mr. Stevens in the course of the foregoing examination, is substantially and briefly as follows, as shown by the abstracts of title referred to in the questions of Mr. Stevens:

The river front of the north fifteen acres of the west thirty acres of the east one-third of the fraction- east half of section 36, town. 21, range 18, being the parcel furtherest downstream, was entered August 11th, 1836, at the United States land office and was patented August 10th, 1837, to Josiah R. Dorr. In 1839 and 1840 an undivided third each was conveyed to James D. Doty, Morgan L. Martin, and Henry Stringham. June 25th, 1840, Stringham's third was conveyed to Francis Desnoyer.

These undivided interests of that part of said premises bordering the bank of the river were somewhat changed; portions of them went to tax sale from year to year and in different years, which tax interests during the years 1857, 1858, 1859, and 1860 were gathered in by Anson Ballard and the same conveyed to Stephen W. Frisbie by different conveyances in the years 1871 and 1872.

These interests were conveyed by said Frisbie in the month of August, 1878, as follows:

730 To C. C. Barnes, an undivided ninth; Michael Fellows, an undivided ninth; Charles Lulling, an undivided ninth; Frederick W. Cotzhausen, an undivided ninth; Joseph Vilas, an undivided third; Bryon Douglass, an undivided ninth, and to John W. Barnes the remaining undivided ninth.

Fellows conveyed his undivided ninth to Joseph Vilas January 29th, 1880.

Douglass conveyed his interest to Joseph Vilas February 10th, 1880.

John W. Barnes conveyed his undivided ninth to Joseph Vilas February 14th, 1880.

Charles Lulling conveyed his undivided ninth to Joseph Vilas February 13th, 1880.

C. C. Barnes conveyed his undivided ninth to Joseph Vilas February 13th, 1880.

Frederick W. Cotzhausen conveyed his undivided ninth to Joseph Vilas February 17th, 1880.

And all of said ninths were shortly thereafter and in the year 1880 conveyed to the defendant The Kaukauna Water Power Company.

Lots 1, 2, 3, and 4 of section 21 were entered by Morgan L. Martin at the United States land office September 1st, 1835, and were patented to him August 10th, 1837. Martin conveyed undivided interests in these lands to Byron Kilbourn, M. T. Williams, and
731 John W. Martin, which undivided interests passed from one to another along through the years 1837, 1840, 1842, 1843, and 1851. Some tax titles were obtained upon some portions of such interests during the year 1853 and down to 1863, when the same tax titles and the original title were gathered in by Anson Ballard and one A. B. Clark, and the same title was conveyed to Stephen W. Frisbie Sept. 22nd, 1871, deed recorded Dec. 28th, 1871, in vol. 31 of Deeds, page 16, for a portion of said lots. Other portions thereof and undivided interests therein came by intermediate conveyances and by tax titles to Stephen W. Frisbie prior to August 21st, 1878. Frisbie conveyed said lots 1, 2, 3, and 4, in section 21, in August, 1878, to Barnes, Fellows, Lulling, Cotzhausen, Vilas, Douglass, and John W. Barnes, and the title to said four lots came through mesne conveyances thereafter, in or about the year 1880, to the said Kaukauna Water Power Company.

Lots 5, 6, 7, and 8 of section 21 and lot one (1) of section 22, town. 21, range 18, south of the river, were all entered in the United States land office in 1835.

Lot 1, section 22, was patented to Daniel Whitney August 10th, 1837.

Lots 5, 6, 7, and 8, section 21, were also patented to Daniel Whitney as follows: Lot 5, September 1st, 1838; lots 6, 7, and 8, August 10th, 1837.

The title to all these last-mentioned lots (5, 6, 7, and 8, in section 21, and lot 1, in section 22) went from Daniel Whitney and wife to Boyd and Beaulieu September 10th, 1835, by deed recorded
732 on the same day in vol. 1 of Deeds, on page 10, of the records of Outagamie county. The title to the river front, more or

less, of these last-mentioned lots remained in Boyd and Beaulieu together and their grantees in undivided portions—that is to say, in one ownership—down to September 23rd, 1871, when the same were contracted to the same Stephen W. Frisbie above mentioned, and afterwards conveyed by Beaulieu to Frisbie by warranty deed dated May 30th, 1872, recorded in vol. 31 of Deeds, page 364.

This Whitney-Frisbie-Beaulieu title went from Frisbie to Barnes, Fellows, and others in undivided portions of a ninth, etc., and such undivided parts went by the same conveyances to the Kaukauna Water Power Company in or about the year 1880.

Lots 2 and 3, section 22, were entered at the United States land office September 1st, 1835, by Joshua Hathaway, Jr., duplicate assigned and patented August 10th, 1837, to Garret V. Denniston, whose title thereto went, August 13th, 1866, through mesne conveyances, to one Justin Darling, and the river front thereof went from Darling, Feb. 9th, 1871, to Barber Smith, who contracted the same river front thereof, September 22nd, 1871, to the same Stephen W. Frisbie, and on May 13th, 1872, the same was conveyed by warranty deed of Barber Smith and wife to Stephen W. Frisbie, which deed was recorded May 30th, 1872, in vol. 31 of Deeds, on page 365, in the office of the register of deeds for the said county of Outagamie. Thereupon afterwards the river front of said lots 2
733 and 3 of said section 22 went by the same chain of conveyances above set out as to the lots in section 21 in undivided portions from Frisbie to Barnes, Cotzhausen, and others and thence to the Kaukauna Water Power Company in or about the year 1880.

Lots 4 and 5 of said section 22 were entered at the United States land office September 1st, 1835, by said Denniston, duplicate assigned and patent issued therefor August 10th, 1837, to Joshua Hathaway, Jr.

Hathaway's title went to Samuel Beardsley April 20th, 1836; the Beardsley title went to the same Stephen W. Frisbie October 16th, 1871; deed recorded Nov. 29th, 1871, in vol. 25 of Deeds, page 554, same register's office. The river front of the same lots was vested in the Kaukauna Water Power Company, in fee, in about the year 1880 by the same chain of mesne conveyances above herein set out as to the lots in section 21.

I hereby certify that the above and foregoing is a true and correct transcript of the testimony taken and proceedings had upon the trial of the above-entitled action as appears from my original shorthand notes thereof.

CHAS. H. DE GROAT,
Official Reporter.

734 Superior court, Milwaukee county. Patten Paper Co. *et al. vs.* Kaukauna Water Power Co. *et al.* Evidence. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

735 Upon the foregoing testimony and proofs the cause was submitted to the court for decision, and thereupon the defendants in the said cross-complaint made and presented to his

honor Robert N. Austin, judge of said superior court, before whom said cause was tried, the requests in writing for findings of fact and conclusions of law next here following, all bearing date and filed in said court upon the 9th day of December, A. D. 1893; each and all of which requests were refused by said judge of said superior court upon said last-mentioned day, and such refusal was then endorsed thereupon over against each such request and at the foot thereof, as thereupon appears, and to the ruling and decision of his honor said superior court judge thereupon said defendants in said cross-complaint did then and there duly and severally, except. Said requests, refusals, and exceptions here follow, to wit:

736 In Superior Court, Milwaukee County.

THE PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER — & PAPER COMPANY, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER COMPANY, THE GREEN BAY & MISSISSIPPI CANAL CO., *et als.*, Defendants.

The plaintiffs request the court to find as follows:

Facts.

Issue upon the complaint and answer and cross-bill.

I.

The corporations named as plaintiffs and defendants are such corporations as are in the complaint alleged.

Refused. Pl'ff- excepts.

II.

The Fox river, where it flows between sections twenty-one (21) and twenty-two (22), south of the river, and section twenty-four (24) and Paul Ducharme's private claim number one (1) and Augustin Grignon's private claim number thirty-five (35), north of the river, is divided into three channels, called the north, middle, and south channels, by Islands Number- Three and Four, which islands were surveyed as independent parcels of land by the United States
737 Government and were sold as such, Island Number Three containing ten & $\frac{20}{100}$ths acres and Island Number Four containing twenty-two and $\frac{53}{100}$ acres of land. Each of said islands was, in 1835, sold by the United States as containing said amounts of land and conveyed by Government patents. The upper Island Number Four is about 135 rods long with the stream and Island Number Three is about 115 rods long with the stream.

Refused. Pl'ff- excepts.

III.

At the time of the commencement of this action and the filing of the notice of pendency thereof, the riparian ownership on said north, south, and middle channels was as stated in the complaint.

Refused. Pl'ff- exc-pts.

IV.

There is a fall of nearly fifty feet in said Fox river from the pond held by the Government dam, a short distance above the head of Island Number Four, to the slack water below the islands.

Refused. Pl'ff- exc-pts.

V.

The Fox river, where it passes through said township, is a public river, having a flow of at least 150,000 cubic feet of water per minute in ordinary low water and furnishing not less than 280-horse power per foot fall, which flow is of great pecuniary value for the purposes of water power to the riparian owners bordering upon those channels to which it was by nature appurtenant.

Refused. Pl'ff- exc-pt.

VI.

All the riparian owners upon said north, middle, and south channels at the time of the commencement of this action
738 and at the time of the filing of the notice of the pendency thereof were parties to this action, either plaintiffs or defendants.

Refused. Pl'ff- exc-pt.

VII.

On the 2nd day of November, 1886, due notice of the pendency of this action was filed in the office of the register of deeds of the county of Outagamie.

Refused. Pl'ff- exc-pt.

VIII.

Said river at said Kaukauna rapids, where it is divided into different channels by said Islands Number- Three and Four, was wont and by nature did flow and pass as follows: $\frac{95}{200}$ths thereof through the north channel and north of Island Number Three, $\frac{43}{200}$ths thereof through the south channel and south of Island Number Four, and $\frac{62}{200}$ths thereof through the middle channel and between Islands Number- Three and Four. Said river was not by nature and is not capable of navigation throughout said rapids or any part thereof.

Refused. Pl'ff- exc-pt.

IX.

In 1879–1880 Matthew J. Meade and N. M. Edwards were the owners of Islands Number- Three and Four, and at that time they built a dam and made a mill pond between said Islands Three and Four; which dam held and which mill pond received the water of said middle channel, and which dam raised a head of about fifteen feet, which is called the Meade & Edwards water power.

Refused. Pl'ff- exc-pt.

X.

739 The Patten Paper Company (Limited) is the owner of certain parcels of land upon said middle channel, upon which are built mills fit to be run by the use of hydraulic power, parcel of said Meade & Edwards' water power, and is the owner of a large amount of the flow of said middle channel, to be used for hydraulic power in the mills upon said land, as alleged in paragraph seventeen of the complaint, to wit, about 750-horse power, when the flow appurtenant to middle channel is sufficient to furnish 1,500-horse power at this Meade & Edwards dam.

Refused. Pl'ff- except.

XI.

Said Patten Paper Company (Limited), being the owner of said lot and mills as aforesaid, with such flow of water, did, on the 12th day of April, 1886, let and lease said lot and mills and about 575-horse power of water power for the term of fifteen years from March 12th, 1883, to the Fox River Pulp and Paper Company.

Refused. Pl'ff- exc-pt.

XII.

Said Fox River Pulp & Paper Company owns a pulp mill standing on the land of said Patten Paper Company which cost a large amount of money and is built to be run and operated and so far as it has been used has been run and operated by water power and to the use and running of which a very considerable flow of water is necessary, to wit, about 575-horse power, and that the use of said water power to run said pulp mill is worth a very considerable sum, but how much the court does not find on account that claim for damages in this action has been withdrawn.

Refused. Pl'ff- exc-pt.

740 XIII.

On or about August 1st, 1881, the Green Bay & Mississippi Canal Company was the owner of the undivided half of the north side of Island Number Four and the south side of Island Number Three and of the Meade & Edwards water power, so called. It then made to the Union Pulp Company a lease of part of Island Number Four, situated on said Meade & Edwards' water power, and also about 600-horse power of water power, to be drawn from the said Meade & Edwards' water power for hydraulic power, for the term of ten years, renewable for one hundred years, which leasehold interest said Union Pulp Company still holds.

Refused. Pl'ff- exc-pt.

XIV.

Said Union Pulp Company has erected on said lot and owns a pulp mill which cost a large amount of money and is built to be run and operated and so far as it has been used has been run and operated by water power and to the use and running of which a

very considerable flow of water is necessary, to wit, about 600-horse power. The use of said water power to run said pulp mill is worth a very considerable sum, but how much the court does not find on account that claim for damages in this action has been withdrawn.

Refused. Pl'ff- exc-pt.

XV.

The Reese Pulp Company, successor in title to George F. Kelso, is the owner of a valuable pulp mill situated on the Meade & Edwards power, between Islands Number-Three and Four, and run by water drawn from the same. Said Reese Pulp Company, as
741 successor to said Kelso, has a lease of the lands on which said pulp mill is situated, with a constant flow of water sufficient to furnish at said Meade & Edwards' dam about 300-horse power, which lease was made on or about August 1st, 1881, by the Patten Paper Company (Limited) and the Green Bay & Mississippi Canal Company as equal and joint lessors, and which lease runs fifteen years from August 1st, 1881, and is renewable for one hundred years.

Refused. Plain. exc-pt.

XVI.

A dam was built across the Fox river about one hundred rods above the head of Island Number Four, under the authority of the act of 1848, creating the board of public works, and legislation subsequent thereto, relating to the improvement of the Fox & Wisconsin rivers, about the year 1855. This dam has since been maintained by the Fox & Wisconsin Improvement Company and its successor in interest, the Green Bay & Mississippi Canal Company, and its successor in interest, the United States of America, substantially as originally built. The United States has since replaced said dam by another dam below the original dam on the river and distant from the same at the south end about fifty feet and at the north end about one hundred feet. Said dam connects on the north side with a retaining wall and embankment, which extends down river near the north bank of the river for about 1,100 feet, where said retaining wall and embankment run into the north bank of the river. Said embankment and retaining wall hold a canal or channel between the same and the original north bank of the river
742 throughout its whole length. From the foot of said retaining wall or embankment said canal runs inland on the north bank of said river and returns to the river again below the foot of the Kaukauna rapids, said canal reaching from the pond above the head of said Kaukauna rapids to the slack water below the islands. In said canal are lift-locks for the purpose of passing boats through said canal from the river below to the river above and from the river above to the river below. The upper lift-lock is about two thousand feet below the north end of said dam and about one thousand feet below the point where said retaining wall and embankment run into the north bank. Down to said first lift-lock the water stands in said canal practically at the same level as the mill

pond above, except so far as it is drawn down by use of water from same for hydraulic power.

Refused. Pl'ff- exc-pt.

XVII.

The navigation of said canal, including the waste and leakage through the locks and through the embankment of the different levels of said canal, requires, during the season of navigation, which lasts about seven months of the year, a flow of about one thousand cubic feet of water per minute.

Refused. Pl'ff- exc-pt.

XVIII.

At the time of the commencement of this action the Kaukauna Water Power Company had constructed a canal reaching from the pond held by the dam above said islands down to a point near the middle of said Island Number Four for the purpose of drawing water through the same for hydraulic power and discharging such water into the south channel of said river and below the head of Island Number Four, and so that the same could not come into said middle channel. Through this canal the Kaukauna Water Power Company and its tenants did, at the commencement of this action, and ever since that time have diverted and turned a much larger proportion of the flow of said river than $\frac{43}{200}$ths thereof, to the damage of all the plaintiffs in this action, but the amount of said damage is not found by the court on account that no claim is made therefor in this action.

743

Refused. Pl'ff- exc-pt.

XIX.

From the foot of the retaining wall or embankment on the north side of the river to the mouth of the middle channel of said river is about five hundred feet. From the foot of said retaining wall down river for a distance of about 1,200 feet the land, about seven and one-half acres, lying between the canal and the river is owned, the undivided half thereof by the Green Bay & Mississippi Canal Company and the undivided half thereof by Henry Hewitt & William P. Hewitt. Up to October, 1884, the Green Bay & Mississippi Canal Company claimed to own the whole thereof.

Refused. Pl'ff- exc-pt.

XX.

The Fox & Wisconsin Improvement Company, to whose title the Green Bay & Mississippi Canal Company has succeeded, about the year 1858 platted said parcel of land into twelve mill lots, numbered, from upstream down, from one (1) to twelve (12), inclusive, four and a part of the fifth of which lots are situated above the mouth of the middle channel, and the remainder of which are situated below the mouth of the middle channel.

Refused. Pl'ff- except.

744 XXI.

At the commencement of this action the Green Bay & Mississippi Canal Company was diverting from the channel of said river and drawing through the said canal on the north side of the river and discharging into the north channel below the head of Island Number Three, and so that the same could not come into the middle channel of said river, a large proportion of the one-half of the flow of said river.

Refused. Pl'ff- exc-pt.

XXII.

On account of the diverting of water from the channel of said river by the Kaukauna Water Power Company and its tenants and by the Green Bay & Mississippi Canal Company and its tenants there could not and did not come into the said middle channel the $\frac{62}{200}$ths of the natural flow of said river. On the contrary, the amount of the flow of said stream which could and did come into said middle channel was very much less than $\frac{62}{200}$ths thereof.

Refused. Pl'ff- exc-pt.

745 *On Issue Made on Cross-bill of Green Bay & Mississippi Canal Company.*

I.

No proceedings were ever had to condemn any of the property of the riparian owners in the flow of the river for water power at the Kaukauna rapids and no compensation was ever paid to any such riparian owners for their interest in the water power.

Refused. Pl'ff- exc-pt.

II.

No claim was made by the Green Bay & Mississippi Canal Company in 1881, nor for ten year- before that, nor since that time, until the filing of the cross-bill in this action to divert from the middle channel at Kaukauna any part of the flow of water appurtenant by nature thereto.

The cross-bill in this action was served on the 11 day of March, 1890, and filed on the 11th day of March, 1890.

Refused. Pl'ff- exc-pt.

III.

The canal built by the State, the Fox & Wisconsin Improvement Company, and the Green Bay & Mississippi Canal Company to create and sustain slack-water navigation around the Kaukauna rapids was so built as to indicate that it was not the intention of the parties building and maintaining the same to take any large proportion of the water of the river through the same for hydraulic purposes. The same could not as built pass through the same more than one-

fourth to one-third part of the flow of the river without
746 interference with navigation. The same remained in that condition until the guard-lock, built near the head of the same, had decayed and practically gone out of existence. Since that time and since 1872 the United States has enlarged said canal at the narrower points thereof, but as enlarged the same is not of sufficient capacity to carry the one-half of the flow of Fox river at an ordinary stage without serious interference with the navigation of the same.

Refused. Pl'ff- exc-pt.

IV.

That there is no other canal leading from the pond held by the dam above Kaukauna rapids, owned and controlled by the Green Bay & Mississippi Canal Company, than the canal used for navigation and controlled for the purposes of navigation by the United States.

Refused. Pl'ff- exc-pt.

V.

There is a fall over the Government dam above the Kaukauna rapids of between eight and nine feet, and from the bottom or foot of said dam to the foot of said rapids of *at* about forty-three feet. From the foot of said dam to the points herein designated the fall is as follows: To the head of Island Number Four, about three feet; to the mouth of the middle channel, about eight $\frac{5}{10}$ feet; to the foot of the Meade & Edwards dam, about $23\frac{5}{10}$ths feet; to the upper point where the Green Bay & Mississippi Canal Company discharges water used for hydraulic purposes from the Government canal into the river, about eight $\frac{5}{10}$ths feet; to the lower point where
747 the Green Bay & Mississippi Canal Company discharges water used for hydraulic purposes from the Government canal into the river, about eleven feet; to the lower point where the Kaukauna Water Power Company discharges water used for hydraulic purposes from the Government canal into the south channel, about nine feet.

Refused. Pl'ff- exc-pt.

VI.

Riparian owners having water powers on said channels created wholly by a fall in said river below said dam have to utilize said powers, made improvements on said channels, in dams, mills, and otherwise, costing at lease $500.00.

Refused. Pl'ff- exc-pt.

VII.

Said Kaukauna rapids below said Government dam are not navigable, and no dam or dams or water-power improvements on said channels interfere with or affect navigation.

Refused. Pl'ff- exc-pt.

VIII.

The fall at said Government dam of the surplus water of said river not used for navigation can be reasonably used for water power at or near the said dam and above each of said channels so as not to materially interfere with the natural flow of that part not used for navigation therein.

Refused. Pl'ff- exc-pt.

IX.

That part of the flow of said river by nature appurtenant to the middle channel can be advantageously used on lots one to four, and so that the same can readily be turned into the Meade & Edwards mill pond on the middle channel, without any substantial loss of head.

Refused. Pl'ff- exc-pt.

748

X.

The tail races of said lots are on about same level as the mill pond of the Meade & Edwards power.

Refused. Pl'ff- exc-pt.

XI.

It was understood by the United States at the time it received conveyance from the Green Bay & Mississippi Canal Company of the Fox & Wisconsin improvement that the water powers therein reserved to the grantor at Kaukauna included only about twenty-five-hundred-horse power, being about the amount of power created by the fall of the surplus water not needed for navigation at the Government dam above the Kaukauna rapids.

Refused. Pl'ff- exc-pt.

XII.

The lots, pieces, or parcels of land at Kaukauna reserved to said grantor in said conveyance were purchased from their riparian owners and are not and never were used or intended to be used for any purposes of navigation.

Refused. Pl'ff- exc-pt.

XIII.

The taking of water from the Government canal, so called, for the purposes of navigation does not aid, but, so far as it affects it at all, interferes with, navigation.

Refused. Pl'ff- exc-pt.

XIV.

Neither plaintiffs nor those under whom they claim ever consented to or acquiesced in any exercise of or claim to the use from said Government canal for water power of any part of the flow of

said river not required for navigation so as to interfere, to
749 their or either of their injury, with the flow of water in said middle channel.

Refused. Pl'ff- exc-pt.

XV.

On June 3rd, 1861, the trustees of the Fox & Wisconsin Improvement Company and Morgan L. Martin made a lease for sixty years, renewable for one hundred years, of 100-horse power of water power to be used on lot 3, in block one; which lease was surrendered and cancelled July 1st, 1882. No other lease of water power was made to be drawn from the mill pond at Kaukauna until January 2nd, 1879. There is now leased by the Green Bay & Mississippi Canal Company, to be drawn from the Government canal at Kaukauna, 60-horse power to be used on lot one, in block one, and 400-horse power to be used on lots 2, 3, and 4 of block one, and 400-horse power to be used on lots below lot 4 on the river.

But considerably more water is used by the lessees of said Green Bay & Mississippi Canal Company than that specified in leases, they being under contract to pay for the excess used at the same rate as that specified in the lease.

Refused. Pl'ff- exc-pt.

XVI.

At an ordinary stage of water the natural flow of Fox river at Kaukauna rapids is at least 150,000 cubic feet per minute, of which not more than 1,000 cubic feet per minute is used through the Government canal for navigation in its season.

Refused. Pl'ff- exc-pt.

750 XVII.

The crest of the Government dam at Kaukauna has always been maintained and still is lower than the walls of the Government canal which it feeds with water, so that the whole flow of said river not used for navigation must, unless said walls are tapped or opened, pass over said crest, down the bed of said stream, and through the north, south, and middle channels in the proportions in which it would by nature.

Refused. Pl'ff- exc-pt.

XVIII.

At an ordinary stage of water the flow down said rapids of all water not used for navigation is sufficient to create at least 280-horse power per foot fall.

Refused. Pl'ff- exc-pt.

XIX.

It was intended by the parties to the conveyance from the Green Bay & Mississippi Canal Company to the United States that the water powers therein reserved to the grantor included, at Kaukauna,

only about 2,500-horse power created by the fall of the surplus water not needed for navigation at the Government dam.

Refused. Pl'ff- exc-pt.

XX.

When this action was begun and the cross-bill herein filed the Green Bay & Mississippi Canal Company, at a distance of more than 1,000 feet below said dam, took and used and still takes and uses for water power for manufacturing purposes only a large part
751 of the flow of said river not used for navigation, and discharged and still discharges it into said river wholly below the upper end of said south channel and largely below the upper end of said middle channel, and claims the right to *to* take, use, and discharge, at said distance below said dam or at any point it pleases, the whole flow of said river not used for navigation.

Refused. Pl'ff- exc-pt.

XXI.

The taking, use, and discharge of water from said canal for water power, as aforesaid, diverts the water so taken from the bed of the river between said Government dam and the place where such water is discharged into the river, thereby greatly injuring plaintiffs' water power on said middle channel, and if the whole flow of said river not used for navigation is so taken and used for water power according to said claim it will still further injure plaintiffs' said power and may destroy every water power on said rapids created by a fall in said river below said dam.

Refused. Pl'ff- exc-pt.

XXII.

When this action was begun the Kaukauna Water Power Company took and used and still takes and uses for water power from the pond created by said Government dam more than $\frac{43}{200}$ of the flow of said river not used for navigation, and discharged and still discharges it into said south channel, thereby diverting, in part, the natural flow not used for navigation from said north and middle channels and materially injuring all water power thereon.

Refused. Pl'ff- exc-pt.

752 XXIII.

No action was ever had or notice of any intent ever given to take or condemn any riparian right of plaintiffs or either of them on said middle channel for any public use.

Conclusions of Law.

1. The incidental water power created by the Government dam and improvement at Kaukauna is the power of the fall of the surplus water not used for navigation at the dam which intercepts the flow of the river to create a head for navigation.

Refused. Pl'ff- exc-pt.

2. No action of the State or Federal Government or reservation in said conveyance to the United States ever gave the grantor therein or those under whom it claims any right to divert for water power only any part of said surplus water from the bed of said stream to the injury of any water power created by a fall in the river at Kaukauna below said dam.

Refused. Pl'ff- exc-pt.

3. The reservation in said conveyance to the United States of lots, pieces, or parcels of land only reserved them to said grantor as a riparian proprietor and reserved or gave no right to use them for water power only so as to injure or impair without their consent the riparian rights of other- in the flow of said surplus water below said dam.

Refused. Pl'ff- exc-pt.

4. The riparian proprietors on said channels below said Government dam are entitled of right to have the whole flow of said
753 river not used for navigation pass through said channels in these proportions: $\frac{95}{200}$ in the north channel, $\frac{62}{200}$ in the middle channel, and $\frac{43}{200}$ in the south channel.

Refused. Pl'ff- exc-pt.

5. The Green Bay and Mississippi Canal Company has no right to use and should be perpetually enjoined from using any water from said Government canal for water power so as to lessen or impair said proportionate flow in said channels of all water not used for navigation.

Refused. Pl'ff- exc-pt.

6. The Kaukauna Water Power Company has no right to use and should be perpetually enjoined from using for water power any water from the pond created by said Government dam so as to lessen or impair said proportionate flow in said middle and north channels of all water not used for navigation.

Refused. Pl'ff- exc-pt.

7. That judgment be entered pursuant to the foregoing conclusions.

Refused. Pl'ff- exc-pt.

Findings and conclusions proposed by plaintiffs. Hooper & Hooper, for plaintiffs.

Each and every one of the foregoing findings and conclusions proposed by plaintiffs separately and individually refused, and to the refusal to find each one seperately plaintiffs excepted in due form, as shown by marginal entry, refused, as immaterial.

Dec. 9th, 1893.

By the court:

R. N. AUSTIN, *Judge.*

754 2726. Superior court, Milwaukee county. Patten Paper Co., Lim., *et als. vs.* Kau. W. P. Co. and G. B. & M. Canal Co. *et als.* Findings and conclusions proposed by plaintiffs. Hooper & Hooper, for plaintiffs. Filed Dec. 9, 1893. F. C. Lorenz, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

755 In Superior Court, Milwaukee County, Wisconsin.

THE PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER COMPANY, THE GREEN BAY & Mississippi Canal Company, Henry Hewitt, Jr., William P. Hewitt, *et al.*, Defendants.

This action having been commenced originally on or about the 23rd day of November, A. D. 1886, for the purpose of determining and adjudicating what share or proportion of the entire natural flow of Fox river is appurtenant and of right should be permitted to flow in the south, middle, and north channels of the Fox river at Kaukauna respectively, and the defendant The Green Bay & Mississippi Canal Company having, on the 11th day of March, 1890, interposed, by way of counter-claim or cross-complaint filed in said original action, an adverse independent claim and assertion of right to all of the water of Fox river at the Kaukauna rapids above what might be necessary for navigation, and the right to use the same for hydraulic purposes as it might see fit, which counter-claim or cross-complaint of the Green Bay & Mississippi Canal Co. was afterwards and
756 before issue taken thereupon amended, setting out more in detail its said adverse claim of right to the use of all of the surplus water over and above what was necessary for navigation; which amended counter-claim or cross-complaint was filed pursuant to the order of court dated Nov. 28th, 1890. To said amended counter-claim or cross-complaint the above-named plaintiffs answered, taking issue thereupon, and the defendants The Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael A. Hunt, Henry Hewitt, Jr., and William P. Hewitt also answered the same, denying all the material facts so stated in said counter-claim or cross-complaint tending to show the said superior right of the Green Bay & Mississippi Canal Co. to all the water power upon the Kaukauna rapids in said counter-claim or cross-complaint contained.

Afterwards, on or about the 18th day of January, 1893, the venue in said cause was changed from the circuit court of Outagamie county to the superior court for the county of Milwaukee, and having been submitted to the court upon the pleadings and proofs, and his honor Robert N. Austin, judge of said court, having made and filed his findings of fact and conclusions of law thereon, substantially granting the prayer of the said counter-claim or cross-complaint, thereupon the defendants The Kaukauna Water Power Company, Henry Hewitt, Jr., William P. Hewitt, and the
757 other defendants, represented by Alfred L. Cary and David S. Ordway in said action, request of the judge of the superior court findings of fact and other conclusions of law thereupon upon the issues raised by said cross-complaint and answers thereto as follows, to wit:

1. That Islands No. 1, 2, 3, 4, in the original complaint mentioned, contain each the number of acres in said original complaint stated and were sold by the United States Government in the year 1835 as containing said amounts of lands and were thereafter patented upon such entry by a patent in usual form that the upper island, No. 4, is about 135 rods long with the stream and Island No. 3 is about 115 rods long with the stream.

Refused, & def'ts except.

2. That at the time of the commencement of this original action and the filing of notice of pendency thereof the riparian ownership on said north, south, and middle channels and on said Islands No. 1, 2, 3, and 4 was as stated in the complaint.

Refused, & def'ts except.

3. That there is a fall of nearly 50 feet in said Fox river from the surface of the pond held by the Government dam a short distance above the head of the Island No. 4 to the slack water below said islands.

Refused, & def'ts except.

4. That there is a fall from the foot of said Government dam at its crossing of the river, a short distance above the mouth
758 of the south channel, to slack water below said islands, of about 40 feet, and that the fall in the various channels between said islands from the mouth of the south channel to slack water below said islands is about the same down each of said channels.

Refused, & def'ts except.

5. That the bed of the said various channels from the foot of said Government dam down to slack water below said islands is and always was rocky, winding, and tortu-us, the water in a state of nature passing down the same at an ordinary stage with great velocity and force, and for that entire distance never was navigable; that the flow of the Fox river at an ordinary low stage is about 150,000 cubic feet of water per minute, and furnishes not less than 280-horse power per foot fall.

Refused, & def'ts except.

6. That the defendants Kaukauna Water Power Company, Henry Hewitt, Jr., and William P. Hewitt are each and all the owners of sufficient land bordering upon said river upon which to use all of the water power appurtenant to or which might be produced upon the lands respectively by them owned and stated in said complaint to be owned by them, which said lands were so situated and located that the said water power so appurtenant could be improved and utilized thereupon.

Refused, & def'ts except.

7. That at an ordinary low stage of water the natural flow of the Fox river at the Kaukauna rapids is about 150,000 cubic feet
759 per minute, of which not more than 1,000 cubic feet per minute is used through the Government canal or necessary for navigation in its season.

Refused, & def'ts except.

8. That the original plan for the improvement of navigation at

the Kaukauna rapids, as reported by the chief engineer Sept. 5th, 1848, to the board of public works, contemplated a dam across the river of about 660 feet in length, 5 feet high, with a set of flood-gates, 2 locks of 10 feet, 2 of 9 feet, and one 11 feet lift, and one and a half miles of canal, costing, as then estimated, $88,330.26. The size and capacity of the canal was at about that time—that is to say, on the 15th of January, 1849—reported by the chief engineer to and adopted by the board in substantially these words: "Plans should correspond with the size and depth of the two streams. Having these objects in view, it is thought that the following dimensions might be safely adopted, viz: A canal with forty feet width of bottom, banks eight feet high, the slopes one and a half to one or two to one, according to the nature of the materials, and calculated for a depth of four feet at usual low water, locks to correspond 125 feet long between gates and 30 feet wide in the chamber. Steamboats adapted to locks of the foregoing dimensions might be 40 feet long, 16 feet beam, and 28 feet across the guards; 80 tons capacity, exclusive of the engine and machinery. * * * The plan to be pursued should be the construction of the necessary dams,
760 lift-locks, and short lines of canals connecting navigable waters above and below."

Refused, & def'ts except.

In this same report of the chief engineer was contained the following: "Grand Kaukauna, one and a half miles below Little Chute; dam, 660 feet long, 5 feet high; a set of flood-gates and two locks of ten feet lift, two of nine feet, and one of eleven feet lift, and a mile and a half of canal."

On the 19th of January, 1849, the board reported to the governor and recommended and approved of the foregoing report.

9. The location of the dam referred to in the above-mentioned report was upstream from the present Government dam at Kaukauna. The north end of such original dam abutted upon the north bank of the Fox river on fractional section 24 and about 100 feet upstream from where the present dam is now located. The south end of said original dam abutted on the south bank of Fox river at a point about 40 feet upstream from the point of abuttal of the present dam as now located."

Refused, & def'ts except.

10. That the canal immediately at the north end of said original dam all lay in the land, the bank slightly at that point projecting into the river. There was constructed in the head or mouth of said original canal what was called a guard-lock, the clear width of which was 50½ feet, and the entire depth thereof being somewhere from four to six feet below the surface of the water at the crest of the dam and in said canal.

Refused, & def'ts except.

761 11. Said original canal was constructed under contract made by the State with Morgan L. Martin in 1851, which required that said canal should, where not otherwise directed, be so constructed that the water should be 44 feet wide on the bottom, 60

feet at the top water line, and 4 feet deep at ordinary stages of water in the stream.

Refused, & def'ts except.

12. Between the time of the original construction of the canal in 1855 and the time of trial of this action the canal has been widened by the various parties in possession of it from time to time until at present it is from 110 to 120 feet most of the distance from the guard-lock down to the bend near the red mill, and at the bend about 150 feet in width; that such widening was done without the purchase or condemnation of the right so to do and without the knowledge or consent of these defendants or any of them.

Refused, & def'ts except.

13. During the past two years a new guard-lock has been placed at the head of the canal of much greater capacity than the old, being 80 feet in the clear in width by about 8 feet and 9 inches in depth—that is to say, the miter sill thereof being about 8 feet and 9 inches below the surface of the water at the crest of the dam and in the canal. The old canal, of the dimensions above given, was only of sufficient size and capacity to pass through said canal for hydraulic purposes, without regard to navigation, about one-fifth of the entire flow of said river, assumed to be 150,000 cubic feet per minute.

Refused, & def'ts except.

762 14. There was a fall in the bed of said Fox river from the foot of the Government dam above the head of Island No. 4 down its north channel to a point opposite to the mouth of the middle channel where the northeasterly line of fractional section 24 strikes the river on its northerly bank and down its south channel to the foot of the Kaukauna Water Power Company's canal, of about and not less than five feet, and at the discharge of the Frambach paper mill, on the north channel, of about six feet, thence gradually increasing in each channel on down to slack water below the rapids.

Refused, & def'ts except.

15. There was a fall in the north channel from the foot of the present Government dam dow*m* to where the center line of farm lot or private claim number one strikes the northerly bank of Fox river of about eleven feet.

Refused, & def'ts except.

16. The State of Wisconsin owned no land at Kaukauna in connection with the improvement, and the only way in which it could use or utilize water power at that point was to sell or lease it to others.

Refused, & def'ts except.

17. The Fox & Wisconsin Improvement Company became the owner in August and September, 1855, by purchase from George W. Lawe and Mathew J. Meade, then owners thereof, of that part of fractional section 24 north of the river from a point above

763 the old dam extending dow*m* to where the downstream line of said fractional section 24 intersects the river at or near what was called A. L. Smith's red grist-mill, and at the same time

became the owner, by purchase from the same parties, of the undivided half of that part of the southerly half lying between the canal and the river of private claim or farm lot No. 1 on the north side of the river at Kaukauna, patented to Paul Ducharme in 1835.

Refused, & def'ts excepts.

18. The canal as originally constructed and excavated downstream from said Smith's red grist-mill all lay inland, the right of way for the construction of which was released by George W. Lawe and Charles and Alex. Grignon to the State of Wisconsin in the year 1851 by an informal instrument releasing the State of Wisconsin from all damages which might be sustained and granting the right of way for the canal over their said lands, which, in fact, extended from the point above mentioned above the dam down to slack water below the Kaukauna rapids.

Refused, & def'ts except.

19. Neither the State of Wisconsin, its board of public works, the Fox & Wisconsin Improvement Company, its trustees, or the Green Bay & Mississippi Canal Company ever acquired, by purchase, condemnation, or otherwise, any right to land on the northerly side of the river at Kaukauna except under and by virtue of the release last aforesaid and the conveyances above mentioned from Meade and Lawe.

Refused, & def'ts except.

20. Neither the State of Wisconsin, its board of public works, the Fox & Wisconsin Improvement Co., its trustees, or the
764 Green Bay & Mississippi Canal Co. ever owned any land or interest in land, and never acquired any lands or interest in lands or water rights, either by condemnation, purchase, or otherwise, on or along the banks of said islands or on the south side of the river at Kaukauna below or downstream from the Government dam. The erection of said Government dam by the United States Government, in 1872, across the river at Kaukauna was pursuant to its right and authority to improve navigation and to appropriate the bed of the river to the top of its banks for that purpose without application to or consent of riparian owners, and no condemnation proceedings were taken or had by the United States Government for acquiring land or any interest in land upon either bank of said river for the erection or abuttal thereupon of said dam, and there is no testimony or proof in this case tending to show that the United States of America, the Green Bay & Mississippi Canal Co., the Fox & Wisconsin Improvement Co., or the State of Wisconsin ever acquired, by purchase, condemnation, or otherwise, any right or authority to appropriate or use any of the water flowing in any of the channels of Fox river below or downstream from said Government dam as now located for hydraulic or mechanical purposes, and no right to so appropriate any of the fall of said waters or water power created thereby below the said Government dam was ever claimed or exercised prior to the time of the commencement of this action.

Refused, & def'ts except.

765 21. That at the time of the trial of this action the Kaukauna Water Power Company was owner in fee-simple of all of the land upon the south bank of Fox river from above the upstream line of lot 5 extending downstream to slack water below the rapids and below Island No. 1; that at the same time said water power company was the owner in fee-simple of the undivided three-fourths of said Island No. 1; that at the same time said water power company was the owner in fee-simple of all of Island No. 2 mentioned in said complaint; that at the time last mentioned said water power company was the owner in fee of a large undivided interest in all of said Island No. 3, but subject to leases of a small part thereof set out in the complaint, and that at the same time the defendant Henry Hewitt, Jr., was the owner in fee of the undivided half of the head of said island, as stated in the complaint, and that at the same time last aforesaid the said water power Co. was the owner in fee of all of said Island No. 4 except about one-quarter undivided thereof, then owned by the said Green Bay & Mississippi Canal Company.

Refused, & def'ts except.

22. That over against Island No. 3, thence on down to slack water below the Kaukauna rapids, are rapids and a fall of at least 25 feet over which the water of said river passes, all of which is susceptible of being utilized and used on the land of said water power company so as to create water power for hydraulic purposes, and capable of being used upon the lands of said Kaukauna Water Power
766 Company bordering said channels.

Refused, & def'ts except.

23. That there is no testimony or proofs in this case showing or tending to show that any claim was ever made by the State of Wisconsin, or by its board of public works, or by the Fox & Wisconsin Improvement Company, or the Green Bay & Mississippi Canal Company, until the making of said counter-claim or so-called cross-complaint by said canal company, that the State of Wisconsin, or the board of public works, or the Fox & Wisconsin Improvement Company, or the Green Bay & Mississippi Canal Company had in any way taken, condemned under the provisions of said act of August 8th, 1848, or in any other way subjected to their dominion or ownership any land or riparian rights or any right to the hydraulic power of said river created or which may be created by fall therein below said Government dam.

Refused, & def'ts except.

24. There is no testimony or proof in this case showing or tending to show that the State of Wisconsin, the board of public works, the Fox & Wisconsin Improvement Company, or the Green Bay & Mississippi Canal Company ever acquired by, through, or under said act of August 8th, 1848, or otherwise, except by purchase and release from the riparian owners above in these findings mentioned, any right to or interest in the bed of Fox river at Kaukauna, or in or to the land upon its banks, or to any of the water thereof, or to the use of the water of said Fox river, except for the purposes of
767 navigation, from the foot of the present Government dam

above said Island No. 4 down to slack water below said Kaukauna rapids.

Refused, & def'ts except.

25. That said original dam at Kaukauna was placed at and the present Government dam stands at the head of the Kaukauna rapids; that above the present Government dam there is substantially no fall in the bed of the Fox river for a distance of about two miles; that the fall created by said Government dam was and is obtained by filling the banks of the river above and backing the water onto the lands of other- not parties to this action.

Refused, & def'ts except.

26. That no water was ever leased to be used for hydraulic purposes or ever in fact used for hydraulic purposes at Kaukauna by the State of Wisconsin or its board of public works.

Refused, & def'ts excepted.

27. That on the 3rd day of June, 1861, a lease for sixty years, at a nominal rent of $1.00 a year, of 100-horse power of the water of said Fox river, to be used for hydraulic purposes and to be drawn from said canal and used on lot 3 of said Jennie's plat, was made by the trustees of the Fox & Wisconsin Improvement Co., together with the Fox & Wisconsin Improvement Co. and Morgan L. Martin, as lessors to parties named, Cord and Gray; that said Morgan L. Martin was at that time the owner in fee of the undivided half of that part of the southerly half of private claim or farm lot
768 No. 1, on the north side of the river at Kaukauna, which lies between the canal and the river, and at the same time the Fox & Wisconsin Improvement Co. was owner in fee of the remaining undivided half of the land last mentioned, as well as of that part of fractional section No. 24 on the north side of and which borders upon the said river.

Refused, & def'ts except.

28. That the Green Bay & Mississippi Canal Company, during the year 1868, leased to one John Jansen about 100-horse power of water, to be taken from said Government canal and used for hydraulic purposes upon lot 7 of Jennie's plat—that is, between said canal and the river, on said southerly half of said private claim No. 1.

Refused, & def'ts except.

29. That on the 1st of May, 1869, the said canal company leased to Peter Reuter and Alexander Reuter 50-horse power, to be taken from said Government canal and used on lots 8 and 9 of said Jennie's plat between the canal and the river.

Refused, & def'ts except.

30. That no further or other water was either used, sold, or leased to be used for hydraulic purposes by the canal company from the canal or elsewhere at Kaukauna until January 2nd, 1879, when said canal Co. leased to a firm named Doane & Hoberg 50-horse power to be used upon lot 5 of Jennie's plat between the canal and the river; that on the 1st of October, 1880, said canal company leased to one Oscar Byrnes 30-horse power of water, to be
769 taken from said canal and used upon lot 1 of said Jennie's

plat and being on part of the southerly half of private claim or farm lot No. 1 on the north side of the river at Kaukauna.

Refused, & def'ts except.

31. That no further or other sales or leases of water to be taken from said Government canal were made, and no other water power for hydraulic purposes, in fact, used from said Government canal on the north side of the river at Kaukauna by said canal company or any one claiming under it until after the filing of the cross-complaint in this action.

Refused, & def'ts except.

32. At an ordinary low stage of water there was created at said Government dam above Island No. 4 about 2,500-horse power available for hydraulic or manufacturing purposes and above what water was necessary for the purposes of navigation, and it was intended by the parties to the conveyance from the Green Bay & Mississippi Canal Co. to the United States that the water powers therein reserved to the grantor included at Kaukauna only about 2,500-horse power, being the same created at and by said Government dam above or upstream from Island No. 4.

Refused, & def'ts except.

33. When this action was commenced and the cross-bill herein filed the said canal company, at a distance of more than 1,200 feet downstream from said dam, took and used from said
770 canal at the level created by said dam for water-power purposes such portions of the flow of said river as is stated in above findings number- 27. 28, 29, and 30, and that since the commencement of this action it has increased the amount so drawn, and at the trial thereof was using, through its tenants and lessees, at least one-half of the whole flow of said river, and then discharged and still discharges all of the water so drawn from said canal for hydraulic or mechanical purposes into the said river below the upper end of Island No. 4, and largely below the upper end of said Island No. 3, so that the same could not and cannot be returned into the said south or middle channels of said river, and thus and during all the time aforesaid and down to the time of the trial of this action has diverted from the lands of the defendants Hewitts and Kaukauna Water Power Company the water not necessary for the purposes of navigation of said Fox river, so that the same could not and cannot pass over and along the lands of said defendants Hewitts and of the said defendant, Kaukauna Water Power Company, as the same were wont to flow in a state of nature.

Refused, & def'ts except.

771 *Conclusions of Law.*

1. That neither the State of Wisconsin, the board of public works, the Fox & Wisconsin Improvement Company, the Green Bay & Mississippi Canal Company, or the United States of America ever had, under the act of the State of Wisconsin of August 8th, 1848, providing for the improvement of the Fox and Wisconsin rivers or otherwise, any power, legal right, or authority to take into

and down the said canal at Kaukauna, past the lands of the defendants lying downstream from said dam, any more water of the Fox river than what was necessary for the purposes of navigation without consent of or purchase from the owners of the land bordering said river below said dam.

Refused, & def'ts except.

2. That none of the water of said Fox river at Kaukauna, except the very small proportion thereof mentioned in the foregoing findings of fact, is now or ever was, and perhaps never will be, necessary for the purposes of navigation, and the water of said river, except the small proportion aforesaid necessary for navigation, should be permitted by the canal company to flow unobstructedly over the said dam, above the head of Island No. 4, and thence down the various channels of said river as it flowed in a state of nature.

Refused, & def'ts except.

3. That neither the State of Wisconsin, the board of public
772 works, the Fox & Wisconsin Improvement Company, the *the* Green Bay & Mississippi Canal Company, or the United States of America ever had, under the said act of the State of Wisconsin of August 8th, 1848, or otherwise, any power, legal right, or authority to take into and down the said canal at Kaukauna, past the lands of the defendants lying downstream from said dam, any of the water of Fox river for mechanical or hydraulic purposes without consent of or purchase from the owners of the land bordering said river below said dam.

Refused, & def'ts except.

4. The right to the use of all of the water of Fox river at Kaukauna from the foot of the present dam above the head of Island No. 4 down the rapids to slack water below said islands is private property, subject only to the paramount right of the public, the State of Wisconsin, or the United States to the use of the same for the purposes of navigation.

Refused, & def'ts except.

5. That the said canal company has no legal right or authority to divert any of the water of said Fox river at Kaukauna from the lands and premises of the defendants in this action lying downstream from the foot of the dam above Island Number Four, and that it is the legal right of said defendants to have all the water of said river, except such as may be necessary for the purposes of navigation, fall over said dam above the head of Island No. 4 and pass down and over the bed and through the channels of said
773 river below said dam in the same manner and substantially in the same proportions as it flowed down said various channels of said river before the erection of said original dam.

Refused, & def'ts except.

6. Said Fox river from the foot of the Government dam above the head of Island No. 4 at Kaukauna down to slack water below the rapids is not and never was within the memory of man navigable in a state of nature, and the owners of the banks of the various channels thereof had and have lawful right and authority to construct dams across and improve said river and the various

channels thereof for hydraulic purposes without any permission or consent of the State of Wisconsin for such purposes.

Refused, & def'ts except.

Dec. 9, 1893.

A. L. CARY AND
DAVID S. ORDWAY,
Att'ys for said Defendants.

Each and every one of the foregoing requests for findings and conclusions proposed above by the said defendants is separately and individually refused, and to which said separate and individual refusals said defendants except in due form, as shown by marginal entries.

R. N. AUSTIN,
Judge of Superior Court of Milwaukee County, Wis.

774 2726. In superior court, Milwaukee county. Patten Paper Company (Limited) *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company *et al.*, defendants, and Green Bay & Mississippi Canal Company *vs.* Patten Paper Co., Kaukauna Water Power Company, *et al.*, defendants in cross-complaint. Requests of def'ts Kaukauna Water Power Co. *et al.* in cross-complaint for findings and conclusions and refusal of Judge Austin. Filed Dec. 9, '93. F. C. Lorenz, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

775 Thereupon his honor said superior court judge, on said 9th day of December, A. D. 1893, and at the December term of said court, made and filed in said action his findings of fact and conclusions of law, the original being in and part of the judgment-roll, and of which the following is a true copy, viz:

Superior Court, Milwaukee County.

PATTEN PAPER COMPANY, LIMITED, *et al.*, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER COMPANY, THE GREEN BAY & MISSISSIPPI CANAL COMPANY, *et al.*, Defendants.

This cause having been submitted to the court upon the pleadings and proofs and upon argument of counsel, I find the following facts:

First. The ownership of the lands bordering upon the rapids of the Fox river at Kaukauna was at the time of the filing of the complaint as alleged in the complaint.

Second. The plaintiffs were at the commencement of this action and still are the owners and lessees of mills situated on the Meade and Edwards power, on the middle channel of the Fox river, at Kaukauna, substantially as alleged, and which mills could
776 not and cannot be run without water power, and the use of which mills, with the water to which they are entitled, is of

great value to the plaintiffs, as alleged, but the exact value is not found, the same being immaterial because of the waiver of damages in this action.

Third. By nature there flowed in the south channel of said river at said Kaukauna rapids $\frac{43}{200}$ of the whole flow of the river and in the middle channel $\frac{62}{200}$ thereof and in the north channel $\frac{95}{200}$ thereof.

Fourth. That at the commencement of this action the Kaukauna Water Power Company, by its servants, agents, and lessees, diverted from the river above the head of Island No. 4, and so that the same could not pass into the middle channel of the river, whereon plaintiffs' mills are situated, or no-th of Island No. 4, more than $\frac{43}{200}$ of the flow of the river.

Fifth. That the State of Wisconsin, under and by virtue of an act of the legislature of the State of Wisconsin approved August 8th, 1848, entered upon the improvement of the Fox and Wisconsin rivers and prosecuted such improvement up to some time in the year 1853, when the Fox and Wisconsin Improvement Company was incorporated and the work of improvement of those rivers turned over to that company.

Sixth. That afterwards that company prosecuted the work of improvement and maintained the same as constructed by the State and by it, substantially as shown by the Plaintiffs' Exhibit
777 "A 1," up to the time of the sale of the works of improvement to the trustees and the organization of the Green Bay & Mississippi Canal Company, when the same was turned over to that company, and that the Green Bay and Mississippi Canal Company completed said work of improvement and have since maintained the same up to the 18th of September, 1872, when said company conveyed to the United States of America, by deed bearing date on that day, "all and singular its (the said Green Bay & Mississippi Canal Company's) property and rights of property to the line of water communication between the Wisconsin river aforesaid and the mouth of the Fox river, including its locks, dams, canals, and franchises, saving and excepting therefrom and reserving to the said party of the first part the following-described property, rights, and portions of franchises, which, in the opinion of the Secretary of War and of Congress, are not needed for public use, to wit:" * * * "Second. Also (saving and reserving) all that part of the franchises of said company, namely, the water powers created by the dams and by the use of the surplus waters not required for the purposes of navigation, with the rights of protection and preservation appurtenant thereto, and the lots, pieces, or parcels of land necessary to the enjoyment of the same and those acquired in reference to the same."

Seventh. That the Fox and Wisconsin Improvement Company, so long as it had the control of said work of improvement, leased so much of the water power created by said dam to be drawn from the arm of the dam or canal as it was able to lease for the
778 best rents therefor it could obtain; that it became and was the absolute owner by grant from the State.

Eighth. That since, down to the trial of this action, the Green

Bay & Mississippi Canal Company has leased all of the water power from the pond created by said dam and said canal or arm of the dam, to be used over the water-power lots abbutting on said canal and shown on the Plaintiffs' Exhibit "A 1," which it could find customers for at the best rent it could obtain, and at the date of the trial it was leasing, to be used from said canal, more than 2,500-horse power of water on the north side, and was permitting the defendant Kaukauna Water Power Company to use more than 2,600-horse power on the south side, and that the water power thus controlled and leased by it passed to it by purchase on foreclosure or mortgage, a trust deed given by the improvement company.

Ninth. That the remainder of the flow of said river was permitted to spill over the dam and to pass down the river.

Tenth. That the river below the dam is divided by islands into three channels, called, respectively, the south, middle, and north channels of the river.

That $\frac{43}{200}$ of the whole flow of the river below the dam passed in a state of nature through the south channel and $\frac{62}{200}$ of the whole flow passed through the middle channel and $\frac{95}{200}$ of the
779 whole flow of the river passed through the north channel.

And, as conclusions of law, I find that under the deed of September 18th, 1872, the United States are bound to maintain the dam and canal so as to furnish to the Green Bay and Mississippi Canal Company all the surplus water from said pond not required for navigation at such points on said canal as said canal company should desire to use the same.

Second. That the maintaining of such dam and canal by the United States and supplying the water flowing therein to the canal company is in execution of such agreement, and that the canal company is entitled to use or lease to others all of the surplus water from said pond not necessary for navigation to be drawn through said canal or directly from said pond, to be used for water power at such point or place on the canal or elsewhere as it shall see fit.

Third. That the plaintiffs are entitled to judgment that of the water permitted by the United States and the Green Bay & Mississippi Canal Company to flow in said river below the dam and above the head of Island No. 4 $\frac{43}{200}$ thereof should of right flow down the south channel and $\frac{157}{200}$ thereof down the main channel north of Island No. 4, and that of the water so permitted to flow down the main channel north of Island No. 4 and above the middle channel $\frac{62}{157}$ thereof should of right flow down the middle — and south of Island No. 3 and $\frac{95}{157}$ thereof down the north channel or north of Island No. 3.

Fourth. That the Green Bay & Mississippi Canal Company
780 is entitled to have and recover judgment against all the other parties in the action; that it is entitled to all the surplus water not necessary for navigation; that it is not obliged to permit any of the water of the river and the pond to flow over the dam, but may withdraw the same through the canal, extending from the pond to the slack water below the rapids, and draw and use the same from said canal wherever it may be available for water power;

which judgment shall not conclude or prejudice the Green Bay & Mississippi Canal Company from recovering against the Kaukauna Water Power Company for the use of the water it may heretofore have drawn or shall hereafter draw from said pond.

Fifth. That the Kaukauna Water Power Company has no right to use and should be enjoined from using any water from the power which escapes over the dam that was created and is maintained by the Government so as to lessen or impair the proportionate flow as hereinbefore determined in said middle & north channels of all water which so escapes.

Sixth. The water power created by the Government dam and as incidental thereto is the power produced by the surplus water not used for navigation flowing into the canal from the pond made by the dam intercepting the water of the river, of which water power and the surplus water created by the improvement the Green Bay & Mississippi Canal Company is the absolute owner.

Seventh. That plaintiff is not entitled to a judgment, as demanded in the amended prayer of the complaint, declaring and ad-
781 judging any portion of the entire natural flow of the waters of Fox river to be appurtenant to or as of right belonging to the north, south, or middle channel of said river below the dam, excepting such water as is permitted to escape over the dam, subject to the right of the Green Bay & Mississippi Canal Co. to use all the water power and all the surplus water of the river not required for navigation flowing from the pond created by the Government dam into the canal, and the plaintiff ought not to have judgment against the Green Bay & Mississippi Canal Co. which will abridge its right to the use of the water power and surplus water as it may deem necessary.

Eighth. The defendant The Green Bay & Mississippi Canal Co. ought to have judgment for costs upon its answer, and the plaintiff is entitled to judgment for costs against such of the defendants as are affected by the relief which by this decision it is considered entitled to.

Let judgment be entered in accordance herewith.

R. N. AUSTIN,
Superior Judge.

Judge's findings and conclusions, signed Dec. 9, 1893. Copy. The original are in a part of the judgment-roll.

782 The plaintiffs in said main action, who are defendants in the cross-complaint, made and on Dec. 9, 1893, filed the following exceptions to said findings, viz:

In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED) and Others, Plaintiffs,
vs.
THE KAUKAUNA WATER POWER COMPANY, THE GREEN BAY & MISSISSIPPI CANAL COMPANY, and Others, Defendants.

Now come the plaintiffs and except to the findings of fact made by the court, as follows:

I.

That plaintiffs except to the first paragraph of finding seventh, because there are no proofs to sustain the finding, and because the proofs show definitely and certainly just how much water was leased by the Fox & Wisconsin Improvement Company, and that the same did not exceed one hundred (100) horse-power.

II.

The plaintiffs except to the last clause in finding seventh, which is in these words: "That it (meaning the Fox & Wisconsin Improvement Company) became and was the absolute owner
783 by grant from the State," because the same is contrary to the proofs in the case and contrary to the weight of evidence in the case, and because the same is a conclusion of law and not a fact, and because as a conclusion of law the same is not correct.

III.

The plaintiffs except to the first clause of finding eighth, because the same is contrary to the evidence in this case, which evidence shows that at the commencement of this action the Green Bay & Mississippi Canal Company was leasing, to be used from the canal on the north side of the river at Kaukauna, called the Government canal, only six hundred and eighty (680) horse-power of water power.

IV.

The plaintiffs except to the finding, part of finding eighth, "that the Green Bay & Mississippi Canal Company has leased all of the water power from the pond created by the dam at Kaukauna and the canal called the Government canal to be used on the water-power lots abutting on said canal and shown on Plaintiffs' Exhibit A 1 which it could find customers for at the best rent it could obtain," for the reason that there is no proof to sustain such finding, and for the further reason that such finding is indefinite and uncertain, and for the further reason that the evidence plainly shows the amounts of water power which the Green Bay & Mississippi Canal Company has leased from time to time to be used from the Government canal, so called.

784 V.

Plaintiffs except to that finding, parcel of finding number eight, which is as follows: "And at the date of the trial it (meaning the

Green Bay & Mississippi Canal Company) was leasing to be used from said canal more than 2,500-horse power of water on the north side,' for the reason that such finding is not sustained by and is contrary to the proofs in the case, which proofs show that at that time the Green Bay & Mississippi Canal Company was leasing only 860-horse power of water to be drawn from the Government canal, so called, on the north side of the river.

VI.

The plaintiffs except to that finding, parcel of finding number eight, which is as follows: "And was permitting the defendant The Kaukauna Water Power Company to use more than 2,600-horse power on the south side," for the reason that the same is contrary to the proofs in the case, and for the reason that the proofs show that only — horse power of water power were used on the south side of the river by the Kaukauna Water Power Company, and because the proofs do not show under what right or authority the Kaukauna Water Power Company was using such water otherwise than that the proofs do show that the Kaukauna Water Power Company had no right to draw water from the pond above the upper dam at Kaukauna without the consent of the Green Bay & Mississippi Canal Company.

785

VII.

Plaintiffs except to that part of finding number eight which is in the following words: "And that the water power thus controlled and leased by it (meaning the Green Bay & Mississippi Canal Company) passed to it by purchase on foreclosure of mortgage or trust deed given by the improvement company," because the same is contrary to the proofs in the case and contrary to the weight of evidence in the case, and because the same is a conclusion of law and not a fact, and because as a conclusion of law the same is not correct.

VIII.

The plaintiffs except to finding number four (4) for the failure to find, as the proof shows, that at the commencement of the action and at the trial the Kaukauna Water Power Company so diverted and still so diverts at least one-third of the flow of said river not used for navigation.

IX.

Plaintiffs except to finding number six as unsupported by the proofs, and especially to the clause thereof which reads " and maintained the same as constructed by the State and by it, substantially as shown by Plaintiffs' Exhibit 'A 1,' up to the time of the sale of the works."

X.

The plaintiffs except to finding nine as unsupported by the evidence. Whatever water spilled over said dam passed over it

786 of right and not as a matter of permission, and the plaintiffs had the right to have the whole flow of the river not used for navigation spill over said dam.

I.

Plaintiffs except to the first conclusion of law, because it is contrary to the evidence and not the law in this case.

II.

The plaintiffs except to the second conclusions of law, because it is contrary to the evidence and not the law in this case.

III.

The plaintiffs except to the third conclusion of law, because it is contrary to the evidence and not the law in this case, and because, from the facts in this case, the conclusion of law should be that the plaintiffs are entitled to judgment that of the entire body of the water making up the volume of the Fox river at Kaukauna, diminished only by the amount required and taken by the United States for the purposes of navigation, $\frac{43}{200}$ths should of right flow down the south channel of said river and $\frac{157}{200}$ thereof down the main channel north of Island No. Four (4), and that of said
787 $\frac{157}{200}$ths thereof flowing down the main channel north of Island No. Four (4) and above the middle channel $\frac{62}{157}$ths should of right flow down the middle channel and south of Island No. Three (3) and $\frac{95}{157}$ths down the north channel or north of Island No. Three (3).

VI.

Plaintiffs except to the seventh conclusion of law, because the same is contrary to the evidence in the case and is not the law of the case.

VII.

The plaintiffs except to the first clause of the eighth conclusion of law, that the defendant The Green Bay & Mississippi Canal Company ought to have judgment for costs upon its answer, because the same is contrary to the evidence in the case and is not the law of the case.

VIII.

The plaintiffs except to the last conclusion of law, "that the plaintiff is entitled to judgment for costs against such of the defendants as are affected by the relief which by this decision it is considered entitled to," because the correct conclusion in that regard is that the plaintiffs should have judgment for costs against all the defendants.

IX.

The plaintiffs except to the fourth conclusion of law as unsupported by the facts found or the undisputed evidence in the case.

788 X.

The plaintiffs except to the sixth conclusion of law as unsupported by the facts found or the undisputed evidence in the case.

HOOPER & HOOPER,
Attorneys for Plaintiffs.

Dec. 9, 1893.

2726. Superior court, Milwaukee county. Patten Paper Co., Lim., *et al.*, *vs.* Kau. W. P. Co. and G. B. & M. C. Co. *et als.* Exceptions of plaintiffs. Hooper & Hooper, for plaintiffs. Filed Dec. 9, 1893. F. C. Lorenz, clerk.

789 Superior Court, Milwaukee County.

THE PATTEN PAPER COMPANY, LIMITED, *et al.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, THE GREEN BAY & MISSISSIPPI CANAL COMPANY, and Others, Defendants.

The defendants in the cross-complaint named below made and on January 31, 1894, filed the following exceptions to said findings:

And now comes the defendants Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt and except to the findings of fact made by the court, as follows:

I.

Said defendants except to the sixth finding of fact by the court for that in stating the exception and reservation contained in the deed from the Green Bay & Mississippi Canal Company to the United States it does not give all of the second clause of said reservation and exception, and omits therefrom the following part thereof: "All subject to the right to use the water for all purposes of navigation as the same is reserved in lease heretofore made
790 by said company, a blank form of which, attached to the said report of said arbitrators, is now on file in the office of the Secretary of War, and to which reference is here made, and subject also to all leases, grants, and assignments made by said company, the said leases, etc., being also reserved therefrom."

II.

Said defendants except to that part of the seventh finding of fact which is in the following language: "That the Fox & Wisconsin Improvement Company, so long as it had the control of said work of improvement, leased so much of the water power created by said dam, to be drawn from the arm of the dam or canal, as it was able to lease for the best rents therefor it could obtain."

III.

Said defendants except to that part of the said seventh finding of fact which is in the following language: "That it became and was the absolute owner by grant from the State."

IV.

Said defendants except to the eighth finding of fact and seperately to each and every part thereof.

V.

Said defendants except specially to that part of the eighth finding of fact which is in the following language: "And that the water power thus controlled and leased by it (meaning the Green Bay & Mississippi Canal Company and referring to the water power stated in the prior part of said eighth finding) passed to it by pur-
791 chase on foreclosure of mortgage, a trust deed given by the improvement company."

VI.

Said defendants except to the ninth finding of fact and seperately to each and every part thereof.

VII.

Said defendants further except to the sixth findings of fact and seperately to each and every part thereof.

VIII.

Said defendants except to the first conclusion of law, which is in the following language: "I find that under the deed of September 18th, 1872, the United States are bound to maintain the dam and canal so as to furnish to the Green Bay & Mississippi Canal Company all the surplus water from said pond not required for navigation at such point on said canal as said canal company should desire to use the same," because it is contrary to the evidence and not the law in this case.

IX.

Said defendants except to the second conclusion of law because it is contrary to the evidence and not the law in this case.

X.

Said defendants except to the third conclusion of law and seperately to each and every part thereof.

XI.

Said defendants except to the fourth conclusion of law
792 and seperately to each and every part thereof.

XII.

Said defendants except to the fifth conclusion of law and separately to each and every part thereof.

XIII.

Said defendants except to the sixth conclusion of law and seperately to each and every part thereof.

XIV.

Said defendants except to the seventh conclusion of law and seperately to each and every part thereof.

XV.

Said defendants except to the eighth conclusion of law and seperately to each and every part thereof.

ALFRED L. CARY,
Attorney for the Defendants Above Named.

DAVID ORDWAY, *Of Counsel.*

793 2726. In superior court of county of Milwaukee. Patten Paper Company, Limited, *et al. vs.* Kaukauna Water Power Company *et al.*, defendants. Kaukauna Water Power Co. *et al.* exceptions to the findings of fact and conclusions of law of the Hon. Robert N. Austin, trial judge. Filed Jan. 31, 1894. F. C. Lorenz, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

794 The defendants Hewitts in said cross-complaint made and on January 31, 1894, filed the following exceptions to said findings, to wit:

In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP & PAPER CO., Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, and Others, Defendants,

and

THE GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,

vs.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, FOX River Pulp & Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

Now comes Henry Hewitt, Jr., and William P. Hewitt, defendants

in the above-entitled action and defendants in said cross-
795 complaint, and except to the findings of fact and conclusions of law made and filed by his honor Robert N. Austin, judge of said superior court, before whom said cause was tried:

1.

Said defendants except to the sixth finding of fact and each seperate part thereof for the reason that the same is not supported by and is contrary to the evidence in the case.

2.

Said defendants except to that part of the seventh finding of fact which is in the following language: "That the Fox & Wisconsin Improvement Company, so long as it had the control of said work of improvement, leased so much of the water power created by said dam, to be drawn from the arm of the dam or canal, as it was able to lease for the best rents therefor it could obtain."

3.

Said defendants except to that part of said seventh finding of fact which is in the following language: "That it became and was the absolute owner by grant from the State."

4.

Said defendants except to the eighth finding of fact and seperately to each and every part thereof.

796 5.

Said defendants except to that part of the eighth finding of fact in these words, "And that the water power thus controlled and leased by it passed to it by purchase on foreclosure or mortgage, a trust deed given by the improvement company," because contrary to the evidence in the case, and because it is shown by the uncontradicted evidence in the case that the Green Bay & Mississippi Canal Company never became the owner of the right to use any water of said river below or downstream from said Government dam except as owners of the land on the north side of the river purchased of George W. Lawe in the year 1855.

6.

Said defendants except to the ninth finding of fact because unsupported by the evidence, the evidence showing that whatever water spilled or passed over said dam so spilled or passed over the same as of right and not as matter of permission, and these defendants had the right to have the whole flow of the river not necessary for the use of navigation pass over said dam and over the land of said defendants below said dam, substantially as it flowed in a state of nature.

Exceptions to Legal Conclusions.

1.

Said defendants except to that part of the first conclusion
797 of law in these words: "I find that under the deed of September 18, 1872, the United States are bound to maintain the dam and canal so as to furnish to the Green Bay & Mississippi Canal Company all the surplus water from said pond not required for navigation."

2.

Said defendants except to all of the remainder of said first conclusion of law in these words, "At such points on said canal as said canal company should desire to use the same," the exception to this first conclusion of law being twofold: First, because the United States were not and are not bound to maintain the dam and canal for the purpose mentioned therein or for any other purpose; and, second, are not bound to maintain the said dam so as to furnish surplus water to the canal company at any point below or downstream from said dam.

3.

Said defendants except to the second conclusion of law and to each and every part thereof because the same is contrary to the evidence and not the law in this case.

4.

Said defendants except to the third conclusion of law because it is contrary to the evidence and is not the law in this case; because,
from the facts shown by the evidence, the conclusion of law
798 should be that the said defendants are entitled to judgment that of the entire flow of the Fox river at Kaukauna, diminished only by the amount required and taken by the United States for the purposes of navigation, all the water of the river should flow down over said dam to the south channel of said river, and that $\frac{157}{200}$ths thereof should flow down the main channel below or downstream from the south channel and north of Island No. 4 to the middle channel; that $\frac{62}{200}$ thereof should of right flow down the middle channel and south of Island No. 3, and $\frac{25}{200}$ thereof should flow down the north channel and north of Island No. 3.

5.

Said defendants except to all that part of the fourth conclusion of law which is in these words: "That the Green Bay & Mississippi Canal Company is entitled to have and recover judgment against all of the other parties to the action; that it is entitled to all the water power not necessary for navigation; that it is not obliged to permit any of the water of the river and the pond to flow over the dam, but may withdraw the same through the canal extending from the pond to the slack water below the rapids and draw and use the

same from said canal wherever it may be available for water power."

6.

Said defendants except to the sixth conclusion of law and seperately to each and every part thereof.

799 7.

Said defendants except to that part of the seventh conclusion of law in these words: "That plaintiff is not entitled to judgment, as demanded in the amended prayer of the complaint, declaring and adjudging any portion- of the entire natural flow of the waters of Fox river to be apportion- to or as of right belonging to the north, south, or middle channel of said river below the dam, excepting such water as is permitted to escape over the dam."

8.

Said defendants except to that part of the seventh conclusion of law in these words: "And the plaintiff out not to have judgment against the Green Bay & Mississippi Canal Company which will abridge its right to the use of the water power and surplus water as it may deem necessary."

9.

Said defendants except to that part of the eighth conclusion of law in these words, "The defendant The Green Bay & Mississippi Canal Company ought to have judgment for costs upon its answer," because said Green Bay & Mississippi Canal Company is not entitled to judgment upon its said answer or cross-complaint against any of the parties mentioned as defendants in said cross-complaint.

Dated January 31st, A. D. 1894.

DAVID S. ORDWAY,
Attorney for said Defendant-, Henry Hewitt, Jr., and William P. Hewitt, Defendants in said Cross-complaint.

800 2726. In superior court of Milwaukee county. Patten Paper Company, Limited, *et al. vs.* Kaukauna Water Power Company *et al.*, defendants, and Green Bay & Mississippi Canal Company, plaintiff in cross-complaint, *vs.* Patten Paper Company, Limited, *et al.*, defendants in cross-suit. Exceptions of defendants Henry Hewitt, Jr., and William P. Hewitt to findings in cross-complaint. David S. Ordway, att'y for def'ts Hewitt. Filed Jan. 31, 1894. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

801 The above and foregoing testimony, documents, exhibits, requests for findings, refusals and exceptions thereto, findings, conclusions of law and exceptions thereto of the various parties to this action comprise and embrace all of the testimony, proofs, documents, and evidence taken and received upon the trial of this action, and all of the requests for findings, refusals thereof and exceptions thereto, and all findings and conclusions of law of the court

and all exceptions of all and any of the parties to this action which have been made, signed, filed, and entered in this action, and because the same are not as yet of record herein I, the undersigned, judge of the superior court of the county of Milwaukee, have, upon the consent of all of the parties to this action to this bill of exceptions, set my hand this 20th day of June, A. D. 1894.

R. N. AUSTIN, *Judge.*

We are content with the foregoing bill of exceptions and the foregoing certificate and the judge is requested to sign the same.

HOOPER & HOOPER,
For Plaintiffs, who are also Defendants in Cross-bill.
P. R. BARNES,
(By M. H.),
For Reese Pulp Company, Defendant in Cross-bill.
BREESE J. STEVENS,
Per E. M.,
Attorney for the G. B. & Miss. Canal Co.
E. MARINER,
Attorney for the G. B. & Miss. Canal Co.
802 ALFRED L. CARY,
Attorney for Kaukauna Water Power Co. and Other Defendants for whom I have Appeared.
DAVID S. ORDWAY,
Attorney for Henry Hewitt, Jr., and William P. Hewitt, Defendants in Cross-complaint.

June 18, 1894.

2726. Filed June 20, 1894. F. C. Lorenz, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

803 In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

To Ephraim Mariner and Breese J. Stevens, attorneys for said The Green Bay & Mississippi Canal Company, and F. C. Lorenz, clerk of said court:

Please take notice that the plaintiffs herein appeal from all of the

judgment and decree rendered by the above court herein entered on the 19th day of January, 1894, in favor of the defendant The Green Bay & Mississippi Canal Company on its cross-bill and against the said plaintiffs and all the defendants, being all and every part of said judgment, excepting only that part of said judgment adjudging that the plaintiffs recover of the defendant The Kaukauna Water Power Company their costs and disbursements herein, and also excepting that part of the third paragraph of said judgment specifying the proportions in which the water flowing in the Fox river should be permitted to flow in the various channels of said river, but they do appeal from that part of said third paragraph which limits the amount of water so apportioned to that part of "the water of the river which is permitted by the Green Bay & Mississippi Canal Company to flow over the upper dam or into the river above Island No. 4 so as to pass down the river."

Dated June 20th, 1894.

MOSES HOOPER,
Attorney for Plaintiffs.

804 Endorsement: 2726. In superior court, Milwaukee county. Patten Paper Co. (Limited) *et als.*, plaintiffs, *vs.* Kaukauna Water Power Company *et als.*, defendants. An undertaking & deposit to stay exec. and for costs waived and within notice served by copy this June 25th, 1894. E. Mariner, B. J. Stevens, att'ys for G. B. & M. Canal Co., defendant. F. C. Lorenz, clerk said court. Moses Hooper, for plaintiffs. Filed Jun- 25, 1894. F. C. Lorenz, clerk. Filed June 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

805 STATE OF WISCONSIN:

Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

To Messrs. B. J. Stevens and E. Mariner, attorneys for defendant The Green Bay and Mississippi Canal Company, and to F. C. Lorenz, Esq., clerk of the superior court for Milwaukee county, Wisconsin:

Please take notice that the above-named defendants, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards

Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, appeal to the supreme court of the State of Wisconsin from so much of the judgment rendered by said superior court herein on the 19th day of January, 1894, in favor of said defendant, The Green Bay and Mississippi Canal Company, and against all of the other parties to this action as is contained in the first, second, and fourth subdivisions of said judgment, and also from so much of the third subdivision of said judgment as limits the division of water among the several channels in said river named in said third subdivision to so much of the water of said river as is or shall be permitted by said Green Bay and Mississippi Canal Company to flow over the upper dam or into the river above Island No. Four so as to pass down the river;

806 and said defendant, Kaukauna Water Power Company, appeals to said supreme court from that part of said judgment which is embraced in the fifth subdivision thereof and which adjudges that the said Green Bay and Mississippi Canal Company do have and recover of the said Kaukauna Water Power Company and certain other parties to this action the sum of $258.91 as and for its costs and disbursements upon the issue made by its answer and its cross-complaint in said action.

Dated June 20th, 1894.

Yours, &c., ALFRED L. CARY,
Attorney for the Defendants so Appealing.

Endorsement: 2726. In superior court, Milwaukee county. Patten Paper Co., Limited, Union Pulp Co., & Fox River Pulp & Paper Co., plaintiffs, *vs.* Kaukauna Water Power Co., Green Bay & Miss. Canal Co., *et al.*, defendants in original action, and Green Bay & Miss. Canal Co., plaintiff in cross-comp., against Patten Paper Co., Limited, Union Pulp Co., Fox River Pulp & Paper Co., Kaukauna Water Power Co., *et al.*, defendants in cross-compl't and appellants. Notice of appeal of the Kaukauna Water Power Co. and others, appearing by Alfred L. Cary, their attorney. This notice of appeal is duly served on us this 25th day of June, 1894, and all undertakings and deposit on this appeal are hereby waived. Dated June 25th, 1894. B. J. Stevens & E. Mariner, att'ys for Green Bay & Miss. Canal Co., respondent. F. C. Lorenz, clerk of court. Filed Jun- 25, 1894. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

807 In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

To Breese J. Stevens and E. Mariner, att'ys for Green Bay & Mississippi Canal Company, defendant in the above-entitled action and plaintiff in the cross-complaint, and F. C. Lorenz, Esq., clerk of the aforesaid court:

Please take notice that the defendants in the above-entitled action, Henry Hewitt, Jr., and William P. Hewitt, and who are also defendants in the cross-complaint of said Green Bay & Mississippi Canal Company filed in said action, appeal from all those parts of the judgment rendered on the 9th day of December, A. D. 1893, in and by the above-named court herein and entered on the 19th day of January, A. D. 1894, in favor of the said Green Bay & Mississippi Canal Company and against the plaintiffs above named, The Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and others, in the following words:

"It is hereby considered, adjudged, and decreed that the defendant The Green Bay and Mississippi Canal Company is the owner of and entitled, as against all of the parties to this action and their successors, heirs, and assigns, to the full flow of the river not necessary for navigation from the said upper or Government dam
808 across the Fox river at Kaukauna, and is not obliged to permit any of the water of the river or pond to flow over the dam, but is entitled to withdraw from the pond made by said dam all of the surplus waters not necessary for navigation, either through the canal extending from the pond to slack water below the rapids or directly from the pond, and use the same from said canal or said pond and let such water to others to be used wherever it may be available for water power and return the same to the river where it shall see fit, and is not obliged to permit any of the water from the river or pond to flow over said dam."

"Second. It is further considered and adjudged that all and singular the other parties to this action are hereby forever enjoined from interfering with the said Green Bay and Mississippi Canal Company in so withdrawing and using such water."

"Fifth. That the Green Bay and Mississippi Canal Company do have and recover of and from The Patten Paper Company (Limited), The Union Pulp Company, and The Fox River Pulp and Paper Company, plaintiffs, and The Kaukauna Water Power Company, Henry Hewitt, Jr., and Wm. P. Hewitt, defendants, the sum of two hundred and fifty-eight & $\frac{90}{100}$ dollars as and for its costs and disbursements upon the issue made by its answer and its cross-complaint herein."

And said defendants, Henry Hewitt, Jr., and William P. Hewitt, appeal from all parts of said judgment which limits, in favor of said Green Bay & Mississippi Canal Company and as against said defendants, the amount of water apportioned between the three channels of said river to that which is permitted by the Green Bay & Mississippi Canal Company to flow over the upper dam or into the river above Island No. Four, so as to pass down the river.

Yours, etc.,

DAVID S. ORDWAY,
Attorney for said Appellants, Henry Hewitt, Jr., and William P. Hewitt.

809 In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED) and UNION PULP COMPANY and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants.

Whereas on the 9th day of December, A. D. 1893, in the superior court of the county of Milwaukee, in the State of Wisconsin, the above-named Green Bay & Mississippi Canal Company, defendant in the above-entitled action and plaintiff in its cross-complaint in the above action, recovered a judgment against the above-named plaintiffs and all the above-named defendants except itself, the said Green Bay & Mississippi Canal Company, which judgment was entered January 19, 1894, adjudging, among other things, that the said Green Bay & Mississippi Canal Company was entitled to withdraw from the pond made by the dam across said Fox river at Kaukauna all of the surplus waters not necessary for navigation either through the canal extending from the pond to slack water below the rapids or directly from the pond and use the same from said canal or said pond and let such water to others to be used wherever

it might be available for water power and return the same to the river where it should see fit, and also for costs against the plaintiffs in the above-entitled action and the Kaukauna Water Power Company, Henry Hewitt, Jr., and William P. Hewitt to the sum and amount of $258.90, and the above-named appellants, Henry Hewitt, Jr., and William P. Hewitt, feeling aggrieved thereby, intend to appeal therefrom to the supreme court of the State of Wisconsin:

Now, therefore, we, Henry Hewitt, Sr., of the city of Menasha, county of Winnebago and State of Wisconsin, and Jos. L. Fieweger, of the city of Menasha, county of Winnebago and State of Wisconsin, do hereby, pursuant to the statute in such case made and provided, undertake that the said appellants will pay all costs and damages which may be awarded against them on said appeal, not exceeding five hundred dollars, and do also undertake that if the said judgment so appealed from or any part thereof be affirmed the said appellants will pay the amount directed to be paid by the said judgment, or the part of such amount as to which the said judgment shall be affirmed if it be affirmed only in part, and all damages which shall be awarded against said appellants on the said appeal.

Dated June 21, 1894.

HENRY HEWITT, SR.
JOS. L. FIEWEGER.

810 STATE OF WISCONSIN, } ss:
Winnebago County, }

Henry Hewitt, Sr., being duly sworn, says he is one of the subscribers to the foregoing undertaking; that he is a resident and householder or freeholder within the State of Wisconsin, and is worth the sum of five hundred dollars over and above all his debts and liabilities in property within the State of Wisconsin not by law exempt from execution.

HENRY HEWITT, SR.

Subscribed and sworn to before me this 21st day of June, A. D. 1894.

HARRY DE WOLF,
Notary Public, Winnebago Co., Wis.

STATE OF WISCONSIN, } ss:
Winnebago County, }

Jos. L. Fieweger, being duly sworn, says that he is one of the subscribers to the foregoing undertaking; that he is a resident and householder or freeholder within the State of Wisconsin, and is worth the sum of five hundred dollars over and above all his debts and liabilities in property within the State of Wisconsin not by law exempt from execution.

JOS. L. FIEWEGER.

Subscribed and sworn to before me this 21st day of June, A. D. 1894.

HARRY DE WOLF,
Notary Public, Winnebago Co., Wis.

811 This notice & undertaking served on us this 25th day of June, 1894.

B. J. STEVENS &
E. MARINER,
Att'ys for G. B. & M. Canal Co., Respondent.
F. C. LORENZ,
Clerk of Court.

Endorsement: 2726. In superior court of Milwaukee county. Patten Paper Company, Limited, *et al.*, plaintiffs, *vs.* Kaukauna Water Power Company, Green Bay & Miss. Canal Co., Henry Hewitt, Jr., William P. Hewitt, *et al.*, defendants, in original action, and Green Bay and Miss. Canal Co., plaintiff in cross-suit, *vs.* Patten Paper Co., Limited; Union Pulp Company, Fox River Pulp & Paper Co., Kaukauna W. P. Co., Henry Hewitt, Jr., Wm. P. Hewitt, *et al.*, defendants in cross-complaint. Notice of appeal & undertaking of appellants Henry Hewitt, Jr., & William P. Hewitt. Filed Jun- 25, 1894. F. C. Lorenz, clerk. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

812 STATE OF WISCONSIN:

Superior Court, Milwaukee County.

PATTEN PAPER COMPANY, LIMITED; UNION PULP COMPANY, and FOX RIVER PULP & PAPER COMPANY, Pl'ffs,
vs.
KAUKAUNA WATER P. CO., GREEN BAY & MISS. C. CO., HENRY HEWITT, JR., *et al.*, Def'ts.

MILWAUKEE COUNTY, *ss:*

I, F. C. Lorenz, clerk of the superior courts in and for the county of Milwaukee and State of Wisconsin, do hereby certify that the process, pleadings, and other papers hereunto annexed are the originals and all the papers filed in the above-entitled action, and that the same are herewith transmitted to the supreme court of the State of Wisconsin, pursuant to the three separate notices of appeal hereto annexed, to wit, of Patten Paper Co., Limited, *et al.*; Kaukauna Water Power Co. *et al.*, and Henry Hewitt, Jr., and William P. Hewitt.

In testimony whereof I have hereunto set my hand and affixed the seal of said superior court, at Milwaukee, this 25th day of June, 1894.

F. C. LORENZ,
Clerk of the Superior Court,
Milwaukee County, Wis.

[SEAL.]

Endorsement: Return on appeal to supreme court of the State of Wisconsin. Filed Jun- 26, 1894. Clarence Kellogg, clerk of supreme court Wis.

813 And afterwards, to wit, on the 5th day of February, A. D. 1895, the same being the tenth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

PATTEN PAPER COMPANY (LIMITED), UNION Pulp Company, and Fox River Pulp and Paper Company, Appellants, *vs.* GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded, etc., Respondent.	Appeal from Superior Court, Milwaukee County, Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel. On consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed, with costs against the said respondents, taxed at the sum of two hundred and sixty-five and nine one-hundredths (265.09) dollars.

814 And on the same fifth day of February, A. D. 1895, the same being the tenth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

KAUKAUNA WATER POWER COMPANY, MATthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, Impleaded, etc., Appellants, *vs.* GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded, &c., Respondent.	Appeal from Superior Court, Wilwaukee County, Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel. On consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed, with costs against the said respondents, taxed at the sum of three hundred two and eighty-four one-hundredths (302.84) dollars.

815 And on the same fifth day of February, A. D. 1895, the same being the tenth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

GREEN BAY & MISSISSIPPI CANAL COMPANY, Respondent,
vs.
HENRY HEWITT, JR., and WILLIAM P. Hewitt, Impleaded, etc., Appellants.
} Appeal from the Superior Court of Milwaukee County, Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel. On consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed, with costs against the said respondent, taxed at the sum of two hundred and sixteen and nine one-hundredths (216.09) dollars.

816 Upon announcing the foregoing decisions on the aforesaid three appeals the court, by Newman, justice, rendered its opinion in the words and figures following—that is to say:

817 In Supreme Court, State of Wisconsin.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY, Respondent,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Appellants.

In 1846 Congress granted to the State of Wisconsin when it should become a State certain lands to be used in improving the navigation of the Fox and Wisconsin rivers. In 1848 the State accepted the grant and placed the construction, maintainance, and operation of such improvement under control of a board of public works. Section 15 of the act provided: "In the construction of such improvements the said board shall have power to enter on, to take possession of, and use all lands, waters, and materials the appropriation of which for the use of such works of improvement shall in their judgment be necessary." This board of public works entered upon the work of improving the navigation of those streams. In 1853 the legislature incorporated the Fox and Wisconsin Improvement Company and granted to it all the works of improvement, land, and property of the State connected therewith on condition that it should prosecute the work of improvement with vigor. The property owned by the State and granted to the improvement company consisted in an easement in the lands occupied by the canal, dams, and ponds and the water powers incidentally created by the dams. The water powers which the State owned and transferred to the improvement company were such as the State
818 owned by virtue of section sixteen (16) of the act of 1848, which provided: "Whenever a water power shall be created by reason of any dam or other improvement made on any of said rivers such water power shall belong to the State." The State did not take or own real estate below its dams except what was taken for and occupied by the canal. In 1866 all the title and interests of the improvement company in all the works of improvement, lands,

and property, including the water powers created by the improvements, were sold under a judgment of foreclosure and sale under a deed of trust executed by the improvement company. The purchasers became incorporated as the Green Bay and Mississippi Canal Company, which became the owner of all the property and improvements which had been owned by the improvement company. In September, 1872, the Green Bay and Mississippi Canal Company conveyed its canal and works of improvement to the United States, reserving to itself all its water powers, in the following language: "The water powers created by the dams and the use of the surplus waters not required for purposes of navigation * * * and lots necessary to the enjoyment of the same."

In this manner the Green Bay and Mississippi Canal Company has derived whatever title and rights it has in the water powers created by the improvements and in the water of the streams.

The Green Bay and Mississippi Canal Company and its said predecessors in title made many and expensive works of improvement for the purpose of facilitating the navigation of the Fox river, such as dams, canals, and locks. The Fox river is a navigable stream, which has an ordinary flow of about three hundred thousand (300,000) cubic feet a minute, and in low water a flow of one hundred and fifty thousand (150,000) cubic feet a minute. At Kaukauna there was a rapids, which had a descent of about forty-two (42) feet from the head of the rapids to slack water below,
819 a distance of about one mile and a half. The flow of one hundred and fifty thousand (150,000) cubic feet a minute of the water down this rapids affords a power equal to three hundred (300) horse-power per foot of fall. This is substantially equal to twelve thousand six hundred (12,600) horse-power on the whole rapids.

Between the years 1851 and 1856 a public dam was built under the act of 1848 at Kaukauna, at the head of the rapids, for the purpose of creating slack water above and feeding a canal around the rapids. This dam created about a nine-foot head, equal to about twenty-seven hundred (2,700) horse-power, of water. A navigable canal was constructed from the pond made by this dam to slack water below the rapids. One thousand (1,000) cubic feet of water a minute is required for the use of the canal for the purposes of navigation during the season of navigation. This is less than one per cent. of the natural flow of the stream. The rest constitutes the surplus water power which is created by the dam.

The river between the dam and slack water below is rapids and has never been navigable. It is divided by islands into three principal channels, known as the north, middle, and south channels. All these islands were surveyed and sold as separate parcels of land by the United States. Island No. 4 is about seven hundred (700) feet below the dam, and is about one hundred and thirty-five (135) rods long. Island No. 3 is about seventy (70) rods below the head of Island No. 4. The water in the river below the dam, by nature, flowed ninety-five two-hundredths ($\frac{95}{200}$) in the north channel, sixty-two two-hundredths ($\frac{62}{200}$) in the middle channel, and forty-three

two-hundredths ($\frac{43}{200}$) in the south channel. The natural, ordinary flow of the water down the rapids affords three hundred (300) horse-power per foot of fall. This is substantially twenty-seven
820 hundred (2,700) horse-power at the dam and twelve thousand six hundred (12,600) horse-power below the dam.

The crest of the Government dam is lower than the walls of the canal, so that so much of the flow of the stream as is not used for navigation must pass over the dam and down the channel of the stream over the rapids and past the lower riparian proprietors unless it is diverted for purposes other than the uses of navigation.

The canal takes its water from the pond immediately above the dam at the north bank of the stream. Its course for some distance is nearly along the north bank of the stream. From the intake of the canal to the first lock, a distance of more than eleven hundred (1,100) feet, the waters of the canal are on the same level as the waters in the pond. There was at one time a guard-lock at the point where the canal meets the pond to protect the banks of the canal in times of freshet. This guard-lock is no longer used and is out of repair. The Green Bay and Mississippi Canal Company has cut the south bank of the canal between the dam and the first lock in several different places in order to make water power for its own mills and to be leased to others. For this purpose it diverts through the canal and through its sluiceways through the bank of the canal a large part of the natural flow of the water of the stream and discharges it again below the heads of Islands Nos. Four (4) and Three (3), so that a considerable part of the natural flow of the stream is wholly diverted from the south and middle channels. This diversion of the water of the stream works great detriment to the riparian owners of water powers below the Government dam, and by accelerating the current impairs navigation.

The action was brought originally by the Patten Paper Company (Limited) to obtain an adjudication of the relative proportions of the flow of the river below the dam in the several channels
821 and to enjoin the Kaukauna Water Power Company from diverting any water to the south channel which of right should flow in the middle channel. But in the course of the litigation the issues have been changed and enlarged, so that now the principal question involved is the right of the Green Bay and Mississippi Canal Company to divert the water of the stream for water power by means of the canal and its sluiceways from the riparian proprietors of water powers below the dam.

All the parties to the action except the Green Bay and Mississippi Canal Company are riparian proprietors or lessees of water powers upon the rapids below the dam, who are damaged by the diversion of the water from its accustomed channels.

The Green Bay and Mississippi Canal Company, in its pleading in the nature of a cross-complaint, claims that "it is the owner of all of the water power created by the Government dam in question, and has the right to make exclusive use of the same at any point on its own lands where the same can be made available, and par-

ticularly at points or places on said dam, including its extension to the said lock."

The other parties to the action denied this right, and over this issue is the contention. The superior court, among other things, adjudged as follows: "It is hereby considered, adjudged, and decreed that the defendant The Green Bay and Mississippi Canal Company is the owner of and entitled, as against all of the parties to this action and their successors, heirs, and assigns, to the full flow of the river not necessary for navigation from the said upper or Government dam across the Fox river at Kaukauna, and is not obliged to permit any of the water of the river or pond to flow over the dam, but is entitled to withdraw from the pond made by said dam all of the surplus waters not necessary for navigation, either
through the canal extending from the pond to slack water
822 below the rapids or directly from the pond, and use the same
from said canal or said pond, and let such water to others to be used wherever it may be available for water power, and return the same to the river where it shall see fit, and is not obliged to permit any of the water from the river or pond to flow over said dam; and it is further considered and adjudged that all and singular the other parties to this action are hereby forever enjoined from interfering with the said Green Bay and Mississippi Canal Company in so withdrawing and using such water."

From this and some other parts of the judgment Patten Paper Company (Limited) *et al.*, Kaukauna Water Power Company *et al.*, Henry Hewitt, Jr., and William P. Hewitt appealed.

NEWMAN, *J.:*

It is settled by the decisions in Green Bay and Mississippi Canal Company *v.* Kaukauna Water Power Company, 70 Wis., 635, and S. C. 142 U. S., 254, that the respondent in these appeals, The Green Bay and Mississippi Canal Company, is the legal owner of all the water power which has been created by the dam at the head of the rapids at Kaukauna, beyond what is required for the purpose of navigation, and that it has all the right and title in that water power which the State acquired in it under section sixteen (16) of the act of 1848, and that such title amounts to entire and absolute ownership; but the court in those cases did not "determine the relative rights of the respondent and the other riparian owners below the dam in respect to the use of the water which would run over the dam if not taken from the pond into the canal," nor "whether there is any restriction upon the manner or place in which the water shall be returned to the river below the dam."

The questions so left undecided in that case are the very questions presented by the record for decision here. The court is now
called upon to determine and define the relative rights of
823 the respondent and the other riparian owners below the dam
in respect to the use of the water which would run over the dam if not taken from the pond through the canal to furnish water power lower down the stream, and whether there is any restriction in the manner or place in which the water shall be returned to the

river below the dam. There is no question of the right of the Government to divert through the canal so much of the water of the stream as is required for the purpose of navigation. This amounts to about one per cent. of the water of the stream. The controversy concerns only the use of the surplus water after the purposes of navigation have been served.

The ordinary rule governing such questions would no doubt require the person owning or controlling the Kaukauna dam and the water power created by it to so use his right as that the water should be returned to the stream in such a manner and at such a place as not to deprive a lower riparian owner of its use as it has been accustomed to flow past his banks; for, as said by Lyon, J., in The Kimberly & Clark Co. *v.* Hewitt, 79 Wis., 334, "the rule is elementary that unless affected by license, grant, prescription, or public right, or the like, every proprietor of land on the bank of a stream of water, whether navigable or not, has the right to use the water as it is wont to run without material alteration or diminution, and no riparian owner has the right to use the water of the stream to the prejudice of other riparian owners above or below him by throwing it back upon the former or subtracting it from the latter." This must be the extent and limit of the respondent's right unless the State, whose title it has acquired, had greater rights.

The statute which vested the title to this water power in the State is in these words: "Whenever a water power shall be created by reason of any dam erected or other improvement made
824 * * * such water power shall belong to the State." See sec. 16, act of 1848. It is by no means clear that this statute invested the State with a title more absolute or with rights more extensive or exclusive in the water of the stream than would belong to the owner of both banks of the stream who should have erected the dam for the purpose of creating water power. Such a private owner would own the water power created by the dam absolutely and entirely, subject only to the public right to divert the water required for navigation. It is not easy of apprehension how the State could acquire a title more ample.

The State could acquire title to such water power only as was created by improvements in the stream which it might lawfully make. It could not lawfully make a dam or any other improvement in the stream for the purpose of creating a water power if such improvement should work injury to a lower riparian owner any more than could a private person, for the riparian rights of the lower owners of land upon the bank of the stream are property such as cannot be taken by the State for even a public use, except in aid of navigation, without compensation to the owner, and cannot be taken at all or impaired for a private use. Chapman *v.* R. R. Co., 33 Wis., 629; Delaplaine *v.* R'y Co., 42 Wis., 214; Janesville *v.* Carpenter, 77 Wis., 288; Att'y Gen. *v.* Eau Claire, 37 Wis., 400–436; Cole *v.* La Grange, 113 U. S., 1; Kaukauna Water Power Co. *v.* Green Bay and Mississippi Canal Co., 142 U. S., 254, 272–73.

The right of the State to improve the stream as a highway and for the purpose of aiding its navigation is superior to the rights o

riparian owners. It may take and divert, absolutely and without compensation, so much of the water of the stream as may be required to improve its navigation, but that is the limit of its right; but because it is not practically feasible to measure and determine with exactness the amount of water required for this public
825 purpose some discretion is allowed, and it may well happen that an excess of water will be produced by a dam, as in this case it may be necessary to stop the entire flow of the stream by a dam in order to divert some small part of the water for the uses of navigation. In that case the surplus need not be permitted to run to waste. The power so created by the surplus water may be leased or sold. This is the water power created by the dam which the State owned.

In Kaukauna Water Power Co. *v.* Green Bay and Mississippi Canal Co., *supra*, on page 273, it is said: "It is probably true that it is beyond the competency of the State to appropriate to itself the property of individuals for the sole purpose of creating a water power to be leased for manufacturing purposes." And on page 275: "The true distinction seems to be between cases where the dam is erected for the express or apparent purpose of obtaining a water power to lease to private individuals, or where in building a dam for a public improvement a wholly unnecessary excess of water is created, and cases where the surplus is a mere incident to the public improvement and a reasonable provision for securing an adequate supply of water at all times for such improvement. * * * So long as the dam was erected for the *bona fide* purpose of furnishing an adequate supply of water for the canal and was not a colorable device for creating a water power the agents of the State are entitled to great latitude of discretion in regard to the height of the dam and the head of water to be created." But it is not the dam itself of which complaint is made. It is claimed that the dam is unlawfully used as a colorable device for the purpose of creating a water power at a point at some distance removed from the dam.

It is evident that the water power which was created incidentally by the erection of the dam is due to the gravity of the water
826 as it falls from the crest to the foot of the dam. What further power it may have in its present distribution is not incidental to the erection of the dam, but such as has been added to it from deliberate design. The first reach of the canal to the first lock did not create a water power. No power existed there until the bank of the canal was cut for the very purpose of creating it. Until then all the water of the stream not required for navigation passed over the dam. There it created a power which was in a true sense incidental to the erection of the dam. The power created by the cutting of the canal was not incidental to the erection of the dam or to the construction and use of the canal for navigation, but was *ex industria* for the purpose of creating a water power. It was created for its own sake and not incidentally. So far from being an incident to the lawful public improvement, it is in derogation of the public improvement. It impedes rather than aids the navigation of the stream.

In some sense it may be said that the first reach of the canal down to the first lock is a part of the dam. Since the use of the guard-lock has been abandoned it upholds the pond. In that sense it is a part of the dam. But as bearing upon the question as to what rights are incidental to the building of the dam proper it is a perversion of terms and ideas. It is merely color to cover the subtraction of the riparian right to this private use of the water of the stream.

There seems to be no sufficient ground for holding that the respondent has acquired additional right by prescription. Twenty years before the commencement of the action it had diverted and was diverting only a small part of the water of the stream. The amount diverted was inconsiderable. It was no such "strong act of exclusive possession" as that it was, *per se*, notice of an adverse claim of right.

827 The State owned no such right to divert the water from the lower riparian owners as is claimed by the respondent. The respondent has acquired no such right. The ordinary rule which governs the relative rights of riparian owners is the rule which governs this case. The lower owners are entitled to have the water—except what is required for navigation—returned to its accustomed channels in such manner and place as that it shall flow past their lands, as it was accustomed to flow.

The judgment of the superior court of Milwaukee county is reversed upon each of the three appeals and remanded with directions to enter judgment in accordance with this opinion.

(Endorsements:) Nos. 172, 173, 174. August term, 1894. The Green Bay and Mississippi Canal Company, respondent, *vs.* Kaukauna Water Power Co. *et al.*, appellants. Opinion, Newman, J. Filed Feb. 5, 1895. Clarence Kellogg, clerk of supreme court Wis.

828 And afterwards, to wit, on the 6th day of March, A. D. 1895, the same being the nineteenth day of said term, and while the said last-mentioned record in said cause was still in the possession and control of this court, came the said Green Bay & Mississippi Canal Company, by E. Mariner and B. J. Stevens, its attorneys, and filed in this court its motion for rehearing in the words and figures following—that is to say:

829 STATE OF WISCONSIN:

In Supreme Court.

Superior Court of Milwaukee County on Change of Venue from Circuit Court of Outagamie County.

Original action.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs in Original Action,
vs.
KAUKAUNA WATER POWER COMPANY, GREEN BAY & MISSISSIPPI CANAL COMPANY, *et al.*, Defendants in Original Action.

Cross-action in which appeals — taken.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint, Respondent Here,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Impleaded with Kaukauna Water Power Company *et al.*, Henry Hewitt, Jr., and William P. Hewitt, *et al.*, Appellants Here.

Same cross-action.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint, Respondent Here,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Impleaded with Patten Paper Company (Limited) *et al.*, Henry Hewitt, Jr., and William P. Hewitt, *et al.*

Same cross-action. Three Appeals.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint, Respondent Here,
vs.
HENRY HEWITT, JR., WILLIAM P. HEWITT, *et al.*, Impleaded with Patten Paper Company (Limited) *et al.*, and Kaukauna Water Power Company *et al.*, Appellants Here.

And now comes The Green Bay & Mississippi Canal Company, plaintiff in cross-complaint, respondent in the three appeals above entitled, by E. Mariner and B. J. Stevens, its attorneys, and
830 moves the court for a rehearing in the above-entitled three appeals and in which decision was rendered on February 5th, 1895.

Dated March 6, A. D. 1895.

E. MARINER,
Milwaukee, Wisc.,
B. J. STEVENS,
Madison, Wis.,
Attorneys for Green Bay & Miss. Canal Co., Respondent.

Which motion having been submitted on printed arguments filed by counsel for the respective parties, and the court, not being now sufficiently advised of and concerning its decision therein, took time to consider of the same.

831 And afterwards, to wit, on Thursday, the twentieth day of June, A. D. 1895, the same being the fiftieth day of said term, this court met pursuant to adjournment.

Present: Hon. John B. Cassoday, Hon. John B. Winslow, Hon. Silas U. Pinney, and Hon. Alfred W. Newman, justices; Clarence Kellogg, clerk.

Milwaukee Superior Court.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Respondent,
vs.
HENRY HEWITT, JR., *et al.*, Impleaded, &c., Appellants.

Opinion by Justice Newman.

The court being fully advised of and concerning the motion of the said respondent for rehearing in this cause, it is now here ordered and adjudged by this court that the said motion be, and the same is hereby, denied, with twenty-five (25) dollars costs and costs of motion.

Milwaukee Superior Court.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Appellants,
vs.
GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded, etc., Respondent.

Opinion by Justice Newman.

The court being fully advised of and concerning the motion of the said respondent for rehearing in this cause, it is now here ordered and adjudged by this court that the said motion be, and the same is hereby, denied, with twenty-five (25) dollars costs and costs of motion.

832 Milwaukee Superior Court.

KAUKAUNA WATER POWER COMPANY *et al.*, Appellants,
vs.
GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded, etc., Respondents.

Opinion by Justice Newman.

The court, being fully advised of and concerning the motion of the said respondent for rehearing in this cause, it is now here ordered and adjudged by this court that the said motion be, and the same is hereby, denied, with twenty-five (25) dollars costs and costs of motion.

833 And upon announcing the foregoing judgment or decision, the court, by Newman, justice, rendered its opinion in the words and figures following—that is to say:

834 In Supreme Court, State of Wisconsin.

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Respondent,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Appellant.

On motion for rehearing.

NEWMAN, *J.*:

This action was originally commenced by The Patten Paper Company, Limited, one of the appellants, to obtain an adjudication of the relative proportions of the flow of the river below the dam in the several channels and to enjoin the Kaukauna Water Power Company from diverting any water to the south channel which of right *show* flow in the middle channel. An adjudication of these relative rights is included in the judgment of the trial court, and all parties are by it enjoined from interfering with the flow of the water in the several channels in the proportions adjudged to be the due of each channel. There is no appeal from this part of the judgment, so no consideration of it by this court is due or proper.

But in the course of the litigation a new issue was introduced by the Green Bay and Mississippi Canal Company. It claimed that by its purchase from the State of the canal and improvements and the water powers which were created by the improvements it became the absolute owner of the water of the stream, with the right as against the owners of water powers on the rapids below the Kaukauna dam to divert all the water of the stream and to use it wherever it best suited its interests and to return it to the stream
835 wherever it chose, regardless of its effect upon the water powers and rights of such lower owners. This claim the trial court sustained to its full extent. It gave judgment sustaining it, and enjoined all the other parties to the action from interfering with the complete exercise of the rights so claimed. From this part of the judgment these appeals were taken. The right of this contention of the Green Bay and Mississippi Canal Company was the only question presented by these appeals. This court held that the Green Bay and Mississippi Canal Company owned all the water power which was created by the construction and operation of the Government dam at Kaukauna; that it had the right to use all the water of the stream not used for the purposes of navigation for the purposes of power wherever it could or chose so far as it could do so without impairing the just rights of other owners of water powers upon the stream; that it was due to other owners of water powers below the dam that the water, after being used by it, should be returned to the stream at such place and in such manner as that it shall flow past the banks of such lower owners in its accustomed channels and as it was accustomed aforetime to flow. The limit to its right is at the point where it infringes upon the rights of others.

It concedes to it all the rights which the State had or could acquire as against such lower owners. The place where it may use the water for power is restricted only by its duty to refrain from injuring others.

The court is satisfied of the correctness and justice of its judgment. It is not deemed to be inconsistent with anything previously said or decided by this court or to the decision of any other court to which attention has been called. It is believed to be grounded impregnably upon that widely applied mandate of the law, *Sic utere tuo ut alienum non laedas.*

836 But it is urged upon this motion that the language of the opinion is only general and will not enable the trial court to determine and direct in what specific place or in what precise manner the water must be returned to the stream nor how and where the respondent may lawfully use that relative proportion of the flow of the stream which is appurtenant to its bank below the dam. Probably this is a just estimation of the opinion. It has assumed to determine only the general principle by which the relative rights of the parties are to be determined, and has pronounced that general principle in general terms only. It could well do no more. The court had no concrete question before it. No such issue was made nor such judgment asked by the respondent's pleading, nor was any such issue adjudged by the trial court, nor does the record furnish data by which such questions can be determined by this court. These are practical questions, which cannot be answered by the aid only of mere theory. Probably it cannot be satisfactorily predicted, in advance of experiment, just where and how the water must be returned to the stream so as to work no injury to lower owners. Certainly, it cannot be determined by a court without evidence of some kind. The court has performed its full function in this case when it has established the general rule which governs it.

The judgment of the superior court of Milwaukee county is reversed upon each of the three appeals as to those parts of the judgment which were appealed from, and the cause is remanded with direction to enter judgment in accordance with the opinion.

The motion for a rehearing is denied.

(Endorsements:) Nos. 172, 173, 174. August term, 1894. On motion for rehearing. Green Bay and Mississippi Canal Co., respondent, *v.* Kaukauna Water Power Co. *et al.*, appellants. Opinion, Newman, J. Filed June 20, 1895. Clarence Kellogg, clerk of supreme court Wis.

837 Thereupon this court issued its remittiturs to the court below in the words and figures following:

838 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the eighth day, of January, A. D. 1895, on the tenth day of the term, to wit, on the fifth day of February, A. D. 1895—

present, Harlow S. Orton, chief justice; John B. Cassoday, John B. Winslow, Silas U. Pinney, and Alfred W. Newman, justices of said court—the following proceedings were had, *inter alia*, to wit:

PATTEN PAPER COMPANY (LIMITED), UNION Pulp Company, and Fox River Pulp and Paper Company, Appellants, *vs.* THE GREEN BAY AND MISSISSIPPI CANAL COMPANY, Impl'd, &c., Respondents.	Appeal from Superior Court, Milwaukee County, State of Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed with costs against the said respondent, taxed at the sum of two hundred and sixty-five and $\frac{9}{100}$ dollars ($265.09).

And that this cause be, and the same is hereby, remanded to the said superior court, with directions to enter judgment in accordance with the opinion of this court.

STATE OF WISCONSIN, *Supreme Court,* } *ss*:

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom and of the whole thereof.

In testimony whereof I have hereunto set my hand and [L. S.] affixed the seal of said court, at Madison, this fifth day of July, A. D. 1895.

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Patten Paper Company (Limited) *et al.*, appellants, against Green Bay and Mississippi Canal Co., impl'd, &c. Remittitur. Filed Jul- 6, 1895. A. W. Hill, clerk.

839 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the eighth day, of January, A. D. 1895, on the tenth day of the term, to wit, on the fifth day of February, A. D. 1895—present, Harlow S. Orton, chief justice; John B. Cassoday, John B. Winslow, Silas U. Pinney, and Alfred W. Newman, justices of said court—the following proceedings were had, *inter alia*, to wit:

KAUKAUNA WATER POWER COMPANY, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore and Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, Impleaded, &c., Appellants,

vs.

THE GREEN BAY AND MISSISSIPPI CANAL COMPANY, Respondents.

Appeal from Superior Court, Milwaukee County, State of Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed, with costs against the said respondent, taxed at the sum of three hundred and two and $\frac{84}{100}$ dollars ($302.84).

And that this cause be, and the same is hereby, remanded to the said superior court, with directions to enter judgment in accordance with the opinion of this court.

STATE OF WISCONSIN, } ss:
Supreme Court, }

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom and of the whole thereof.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at Madison, this fifth day of July, [L. S.] A. D. 1895.

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Kaukauna Water Power Co. *et al.*, appellants, against The Green Bay and Mississippi Canal Company, respondent. Remittitur. Filed Jul- 6, 1895. A. W. Hill, clerk.

840 Be it remembered that at a term of the supreme court of the State of Wisconsin begun and held at the capitol, in Madison, the seat of government of said State, on the second Tuesday, to wit, on the eighth day, of January, A. D. 1895, on the tenth day of the term, to wit, on the fifth day of February, A. D. 1895—present, Harlow S. Orton, chief justice; John B. Cassoday, John B. Winslow, Silas U. Pinney, and Alfred W. Newman, justices of said court—the following proceeding were had, *inter alia*, to wit:

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Respondent, *vs.* HENRY HEWITT, JR., and WILLIAM P. HEWITT, Impl'd, &c, Appellants.	Appeal from Superior Court, Milwaukee County, State of Wisconsin.

This cause came on to be heard on appeal from the judgment of the superior court of Milwaukee county and was argued by counsel; on consideration whereof it is now here ordered and adjudged by this court that the judgment of the superior court of Milwaukee county in this cause be, and the same is hereby, reversed, with costs against the said respondent, taxed at the sum of two hundred and sixteen and $\frac{9}{100}$ dollars ($216.09).

And that this cause be, and the same is hereby, remanded to the said superior court with directions to enter judgment in accordance with the opinion of this court.

STATE OF WISCONSIN, } *ss.*:
Supreme Court, }

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby certify that I have compared the above and foregoing with the original order and judgment of the court in the above-entitled cause, and that it is a correct transcript therefrom and of the whole thereof.

In testimony whereof I have hereunto set my hand and [L. S.] affixed the seal of said court, at Madison, this fifth day of July, A. D. 1895.

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

[Endorsed:] State of Wisconsin supreme court. Green Bay and Mississippi Canal Company, respondent, against Henry Hewitt, Jr., *et al.*, appellants. Remittitur. Filed Jul- 6, 1895. A. W. Hill, clerk.

841 Thereupon the following further proceedings were had in this same cause and in this same court:

Pleas before the supreme court of the State of Wisconsin, at a term thereof begun and held at the capitol, in Madison, the seat of government of said State, on the first Tuesday, to wit, the 7th day, of January, A. D. 1896.

Present: John B. Cassoday, chief justice; John B. Winslow, Silas U. Pinney, Alfred W. Newman, and Roujet D. Marshall, justices; Clarence Kellogg, clerk.

Be it remembered that heretofore, to wit, on the 23rd day of November, in the year of our Lord one thousand eight hundred and ninety-five, came into the office of the clerk of the supreme court of the State of Wisconsin the Green Bay & Mississippi Canal Company and filed in said court its certain notice of appeal and under-

taking, according to the statute in such case made and provided, and also the return to such appeal of the clerk of the superior court of Milwaukee county, in said State, the said return consisting of all of the returns hereto annexed and herein stated as made on the several foregoing appeals, and further return in the words and figures following—that is to say:

842 At the June term, 1895, of the superior court of Milwaukee county, in the State of Wisconsin, held at the city of Milwaukee, in said county, on the 27th day of September, A. D. 1895. Present: Hon. R. N. Austin, judge of said court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATHEW J. MEADE, HARRIET S. EDWARDS, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild and Reese Pulp Company, and Milwaukee, Lake Shore and Western Railway Company, Defendants,

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, FOX River Pulp and Paper Company, Kaukauna Water Power Company, Mathew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

A separate appeal having been taken to the supreme court of the State of Wisconsin by The Patten Paper Company, Limited, Union Pulp Company, and Fox River Pulp and Paper Company, plaintiffs in said main action, a separate appeal also having been taken by The Kaukauna Water Power Company, Mathew J. Meade,
843 Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, defendants in said main suit, and a separate appeal also having been taken to the supreme court of the State of Wisconsin by the defendants in the main suit, Henry Hewitt, Jr., and William P. Hewitt, all of said appeals being from the judgment rendered and entered herein on the issue joined upon the said cross-complaint of the Green Bay & Mississippi Canal Company

on the 19th day of January, 1894; and said judgment so entered in and by this court on said 19th day of January, 1894, having been reversed upon each of said separate appeals by the judgment of said supreme court, and said supreme court having remitted to this court the record and papers transmitted to said supreme court on said appeals, together with its decision, wherein, among other things, it decided and directed that this cause be, and the same is hereby, remanded to the said superior court with directions to enter judgment in accordance with the opinion of this court;

And whereas the judgments and remittiturs upon the other two appeals were in the same language except as to the amount of costs of the supreme court taxed therein:

First. Upon motion of Hooper & Hooper, plaintiffs' attorneys, it is considered, adjudged, and decreed, as in favor of the Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company against all the defendants, that all of the water of the river except that required for purposes of navigation shall be, and is hereby, divided and apportioned between and to the south, middle, and north channels of the river in the following proportions—that is to say, $\frac{43}{200}$ thereof of right should flow down the south channel, $\frac{157}{200}$ thereof should of right flow down the main channel of the river north of Island No. 4, and that of the water so of right flowing down the main channel of the river north of Island No. 4 and above the middle channel $\frac{62}{125}$ thereof should of right flow down the middle channel and south of Island No. 3, and that of the water flowing down the north channel north of Island
844 No. 4 and above Island No. 3 $\frac{95}{157}$ part should of right flow down the north channel and north of Island No. 3; and each of the parties to this action, their heirs, successors, and assigns, are forever enjoined from interfering with the waters of said river so as to prevent their flowing into said channels in the proportions aforesaid.

Second. Upon motion of Messrs. Fish & Cary, attorneys for the said appellants, Kaukauna Water Power Company and others, and David S. Ordway, attorney for said appellants, Henry Hewitt, Jr., and William P. Hewitt, it is considered and adjudged, upon the issues joined by the cross-complaint of the defendant Green Bay & Mississippi Canal Company and the several answers made thereto by the other parties to this action, defendants in said cross-complaint, that the water power which was created incidentally by the erection of said dam at Kaukauna is due to the gravity of the water as it falls from the crest to the foot of the dam proper across said river and not to the use of the water of said river through said canal, and that neither said State of Wisconsin nor said Green Bay & Mississippi Canal Company, as assignee of said State, ever acquired or owned any water power upon said river at Kaukauna by reason of or as incidental to the construction and use of said canal for navigation.

Third. And it is further adjudged by the court that said Green Bay & Mississippi Canal Company, its successors and assigns, shall so use the water power, if at all, created by said dam as that all the water used for water power or hydraulic purposes shall be returned

to the stream in such a manner and at such place as not to deprive the appellants or those claiming under or through them of its use as it had been accustomed to flow past their banks, and that it shall flow past the lands of said appellants on said river and in the several channels of said river below said dam as it was accustomed to flow,
and that said appellants have the right to use the water of
845 said river except such as is or may be necessary for navigation as it was wont to run in a state of nature without material alteration or diminution.

Fourth. And it is further adjudged that the relief demanded in said cross-complaint be denied except as hereinbefore adjudged.

Fifth. And it is further adjudged that the appellants Patten Paper Company, Limited; Union Pulp Company, and Fox River Pulp & Paper Company have and recover of and from The Green Bay & Mississippi Canal Company, respondent in said cross-complaint, the sum of one hundred seventy dollars and seventy-three cents for their costs and disbursements upon the issue made by their answer to the cross-complaint herein aforesaid.

Sixth. And it is further adjudged that the defendants in said cross-complaint, Kaukauna Water Power Company, Mathew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt, have and recover of and from The Green Bay & Mississippi Canal Company, plaintiff in said cross-complaint, the sum of seven hundred and forty-five dollars and forty-seven cents ($745.47) for their costs and disbursements upon the issue made by their answer to the cross-complaint herein of said Green Bay & Mississippi Canal Company.

Seventh. And it is further adjudged that the said Henry Hewitt, Jr., and William P. Hewitt, defendants in said cross-complaint, have and recover of and from said Green Bay & Mississippi Canal Company, plaintiff in said cross-complaint, the sum of one hundred thirty-five dollars and forty-seven cents for their costs and disbursements upon the issue made by their answers to the cross-complaint herein of said Green Bay & Mississippi Canal Company.

By the court:

R. N. AUSTIN, *Judge.*

846 Endorsement: Superior court, Milwaukee county. 2726. Patten Paper Company, Lim., *et al.*, pltf., *v.* Kaukauna Water Power Company *et al.*, defendants. Judgment. 8592. Docketed Oct. 15, '95, at 12 m. A. W. Hill, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

847 STATE OF WISCONSIN:

In the Superior Court of the County of Milwaukee.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Cross-complaint.

STATE OF WISCONSIN, *County of Dane*, } ss:

B. J. Stevens, being duly sworn, deposes and says that he is one of the attorneys for The Green Bay & Mississippi Canal Company, defendant in the original action above entitled and plaintiff in the cross-action above entitled; that judgment was entered in the above-entitled actions at the June term for the year 1895 of the court above entitled, to wit, on the 27th day of September, A. D. 1895; that in anticipation of an appeal from said judgment on the part of said canal company the attorneys for said company have already caused to be prepared and have served upon the attorneys for the other parties to said actions a draft bill of exceptions; which bill of exceptions cannot under the rules of practice applicable thereto be settled by said court for at least ten days from and after the date hereof; that it is the intention of the attorneys of said company to hasten the settlement of said bill and cause the same to be filed as soon as may be, which deponent thinks may be so settled and filed within the said period of ten days or at least fifteen days from and after this date.

Deponent further says that in order to obtain a stay of proceedings it is important that the appeal from the said judgment
848 should be taken forthwith and before the said bill of exceptions be settled and filed, but that the time for making return of the record to the supreme court, pursuant to the rules applicable to the appeal when perfected, will not expire until some days after the aforesaid period of time within which it is the deponent's expectation the bill of exceptions will be settled and filed; wherefore deponent prays that an order may be entered directing the clerk to delay a certification and transmission of the record to the supreme court until said bill shall have been filed, providing that he shall not delay the same until after the time fixed for making his return shall have expired.

And further deponent saith not.

B. J. STEVENS.

Subscribed and sworn to before me this 31st day of October, A. D. 1895.

WILLIAM MARINER,
Notary Public, Milwaukee Co., Wisconsin.

849 STATE OF WISCONSIN:

In the Superior Court of the County of Milwaukee.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants.

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Cross-complaint.

On reading and filing the affidavit of B. J. Stevens, hereto annexed, and it appearing that notice of appeal by the Green Bay & Mississippi Canal Company from the judgment entered in the above-entitled action on the 27th day of September, A. D. 1895, has been filed in this court, on motion of B. J. Stevens and E. Mariner, attorneys for said company, it is—

Ordered that the clerk of this court do delay the making of certificate and transmission of record in the above-entitled cases to the supreme court until the bill of exceptions referred to in said affidavit be settled and filed, providing that in no case shall he delay making such certificate and transmission of record beyond the time fixed by law or rule for such making and transmission.

And that the clerk do transmit therewith the annexed affidavit and this order.

Dated October 31, 1895.

By the court:

R. N. AUSTIN, *Judge.*

Endorsement: 2726. In superior ct., Milw. county. Patten Paper Co., Limited, *et al.*, pl'ffs, *v.* Kaukauna Water Power Co. *et al.*, def'ts, and Green Bay & Miss. Canal Co., pl'ff in cross-compl't, *v.*
850 Patten Paper Co., Limited, *et al.*, def'ts in cross-compl't. Affidavit & order relating to appeal. B. J. Stevens & E. Mariner, att'ys for G. B. & M. C. Co. Filed Oct. 31, 1895. A. W. Hill, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

851 At the October term, 1895, of the superior court of Milwaukee county, in the State of Wisconsin, held at the city of Milwaukee, in said county, on the 18th day of November, A. D. 1895.

Present: Hon. R. N. Austin, judge of said court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,
against
KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, and Milwaukee, Lake Shore and Western Railway Company, Defendants,

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

852 Afterwards and on the 2nd day of September, 1895, came the plaintiffs in the above-entitled action, by Hooper and Hooper, their attorneys; the defendant The Kaukauna Water Power Company and its tenants, defendants in this action, by Messrs. Fish and Cary, their attorneys, and Henry Hewitt, Jr., and William P. Hewitt, by David S. Ordway, their attorney, and The Green Bay and Mississippi Canal Company and its tenants, defendants in this action, by Messrs. B. J. Stevens and E. Mariner, their attorneys; and thereupon Messrs. Stevens and Mariner moved said court, for said company, upon motion papers served Aug. 31, 1895, for leave to file an amendment to their cross-complaint, which *are* in the words and figures following:

853 COUNTY OF MILWAUKEE, *ss:*

In Superior Court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and Fox River Pulp and Paper Company, Plaintiffs in Original Action,

vs.

KAUKAUNA WATER POWER COMPANY *et al.*, Defendants in Original Action,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint and Defendant in Original Action,

vs.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Cross-action and Plaintiffs in Original Action; Kaukauna Water Power Company *et al.*, Henry Hewitt, Jr., and William P. Hewitt, Defendants in Original & Cross Actions.

SIRS: Take notice that upon the application for judgment upon filing the remittitur of the supreme court herein, already noticed to be heard before the superior court of Milwaukee county, at the court-house, in the city of Milwaukee, on Monday, the 2nd day of September, A. D. 1895, or as soon thereafter as counsel can be heard, the defendant The Green Bay & Mississippi Canal Company will apply to the court, upon said remittitur, the opinions of the supreme court, and the pleadings, papers, and proceedings on file and of record in said case and the defense and counter-claim hereinafter mentioned, for leave to amend its answer to the plaintiffs' complaint in the above-entitled original action by inserting therein before the prayer and as paragraph V thereof a separate defense and counter-claim to the cause of action in the said complaint stated, a copy of which defense and counter-claim is hereto annexed and made a part hereof, or will apply for such other or further judgment, order, or relief in the premises as shall be just and proper.

E. MARINER &
B. J. STEVENS,
Att'ys & Counsel for Def't G. B. & M. C. Co.

854 To David S. Ordway, Esq., Milwaukee, Wis., attorney for defendants Henry Hewitt, Jr., and William P. Hewitt and of counsel for Kaukauna Water Power Company *et al.*; Mess. Fish & Cary, Milwaukee, Wis., attorneys for Kaukauna Water Power Company *et al.*; Moses Hooper, Esq., Oshkosh, Wis., attorney for Patten Paper Company (Limited) *et al.*, and George W. Green, Esq., Green Bay, Wis., attorney for Patten Paper Company (Limited) *et al.*

855 STATE OF WISCONSIN:

In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and Fox River Pulp and Paper Company, Plaintiffs in Original Action,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, Milwaukee, Lake Shore & Western Railway Company, David McCartney, G. Lind, James E. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, Defendants in Original Action,

and

PATTEN PAPER COMPANY (LIMITED) *et al.*, KAUKAUNA WATER Power Company *et al.*, Henry Hewitt, Jr., and William P. Hewitt, Plaintiffs in Original & Def'ts in Cross Complaint,

ads.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Defendant in Original Action and Plaintiff in Cross-complaint.

Amendment to the answer of the Green Bay & Mississippi Canal Company to the plaintiff's complaint herein to be inserted before the prayer thereof.

856 V.

And for a further and separate defence in bar and by way of counter-claim against The Kaukauna Water Power Company and its tenants, who are defendants in this action, this defendant shows that its grantors, the State of Wisconsin and the Fox and Wisconsin Improvement Company, under the act of 1848, constructed at the head of the Kaukauna rapids a dam and work of improvement, which consisted of an embankment on the south side of the river from the upper end of the Hunt tract, so called, downstream to near the middle of said lot 5, and from there a dam about ten feet high nearly across the river to a point about one hundred feet from the north bank, and from that point constructed an embankment from thirteen to twenty feet in height downstream in the bed of the river to about the — side of fractional section 24, a distance of about thirteen hundred feet, and from there, leaving the river, continued said embankment down to the first lock in said canal, a distance of about a thousand feet, such embankments being extensions or arms of the dam, and so as to leave a body of water of one level, consist-

ing of the pond and canal, which we call the Government canal, made by said embankments, dam, and lock extending from the said lock, being the upper lock at Kaukauna, to the next rapid above; that said canal and structures were intended to be constructed of sufficient width and depth to carry the ordinary low-water flow of the river through said canal with the design of using the pond and canal so created by said dam and embankments from the foot of the rapid next above the dam down to the lock primarily for navigation and as a single level in said work of improvement, and incidentally to create a water power by drawing the surplus water from said pond through said canal and through openings made in the bank of said canal into mills located upon the water-power lots hereinafter mentioned, and discharging the water after it had been used in the mills into the river below; that at the time of the
857 construction of said dam and embankments there was urgent need of such a highway; that the construction of this work of improvement was the prominent political question among the people on the line of the Fox river from Portage City to Green Bay; that at Kaukauna alone there were and are fifteen-thousand-horse power of water power; that at the time said dam and canal were constructed there was no demand for nor any use for water power; that the first lease which could be made upon said canal was of sixty-horse power in 1860, five years after the completion of the dam and canal; that no considerable amount of water was leased on said rapid till the years 1882 and 1883, and that less than half of the power on that rapid is leased at the present time.

That the head of said dam is about ten feet. The flow of the river from the dam is very rapid, and is the deepest on the north side. There is a fall in the river from the foot of the dam to the head of Island No. Four of about four feet; to the head of Island No. Three, of about seven; to the tail race of the Kaukauna Paper Company's mill, of about seventeen feet; to the north line of the south half of private claim No. one, of about twelve feet; all from the foot of the dam.

That in order to furnish sites for mills to use the water power created by said dam and embankment the Fox & Wisconsin Improvement Company, while they were being constructed, purchased from said Lawe and the defendant Meade all that part of section twenty-four and of private claim one which lies between a line drawn from a point twenty feet north from the head of the canal downstream parallel to the canal to the north line of the south half of private claim No. 1 and the Fox river for water-power lots over which to use the water power created by said canal; that shortly after such purchase the said Fox and Wisconsin Improvement Company caused the said premises to be divided into mill lots of one hundred feet front, extending from the canal to the river and numbered consecutively, commencing at or about the south end
858 of section 24 and extending downstream to the north line of the south half of private claim one; that except those lots there are no sites for mills through which to use the water from said canal; that the north bank of said river from the dam—*i. e.*,

the cross-dam—down to private claim one rises steep and abrupt directly from the river and canal to a height of nearly or quite fifty feet before any level land is reached, and there is no land available for mill sites between the canal and the river, except upon the south half of private claim No. 1; that the embankment of so much of the canal as is upon section 24 stands wholly in the river, and much of the way nearly or quite the whole width of the canal is in the river bed; that there is not now and never has been since the construction of said dam any highway to the dam on the north side or that part of the canal that is upon section 24, and it is not practicable to construct one to any point on said embankment on section twenty-four where a mill could be constructed or used; that the uppermost site that is available for mill dams is upon lot 1 of the said canal lots; that as soon after the construction of said dam as it was able to lease water power and some time in the year 1860 the said Fox and Wisconsin Improvement Company commenced leasing water from said Government canal to whomsoever it could, and has, as rapidly as it has been able to do so, leased such canal lots with water power to be drawn from the canal and to be used over said lots until the present time, when between seventy and eighty thousand cubic feet per minute are being drawn from said canal and discharged through mills into the river at ordinary stages of the river, almost all of which is drawn over lots 1, 2, 3, 4, 5, and 6, the greatest amount being drawn and used over lots 3 and 4, which amount of water is much less than the amount of the water of said river which is appurtenant to the north bank of the river and to the property of this defendant; that up to the time of the commencement of the action brought by the Kaukauna
859 Water Power Company against this defendant in March, 1888, as hereinafter set forth, no one ever gainsaid the right of this defendant to draw one-half the water of said river into said canal and discharge the same through openings in the bank of said canal into the river below for water-power purposes; that almost the whole amount of water so drawn and used for water-power purposes is returned to the river above the head of Island No. 3, and is so used at a head of from twelve to seventeen feet; that the lessees of said lots have constructed upon them large and valuable mills and improvements to the amount of nearly or quite $200,000, relying on the use of the water drawn from said canal to propel them.

This defendant, further answering, shows that this defendant and the said plaintiff and the said Meade and Edwards, or some of them with the assent of all, have constructed a low dam across the north channel of the river to the head of Island No. 3, by which the water in said north channel is thrown into the pond created by the said dam so constructed as aforesaid, and upon which the said plaintiff's mills are situated, which dam does and will turn into the middle channel of the river at least sixty-two two-hundredths of the flow of the river at an ordinary stage of water, when the defendant The Kaukauna Water Power Company does not withdraw more than the proportion of the river due to the south channel.

This defendant further shows that it has not drawn nor have its tenants drawn at any time into said canal the proportion of the flow of the river appurtenant to the north bank of the river, and that the said plaintiff has usually drawn from the north channel of the river when the water was low so much water that the flow of the north channel of the river below the head of Island No. 3 was less than the fair share of the whole flow of the river due to that channel, although the said plaintiff did not draw more than its fair share of the whole river.

That long before the commencement of this action, to wit,
860 in the summer of the year 1884, the defendant The Kaukauna Water Power Company, which was the owner of property on the south side of the river, commenced excavating a canal leading from the said pond above the Kaukauna dam, so called, from a point a little above the lower side of the Hunt land down to a point below the upper end of Island No. 3 for the purpose of drawing therein water from the pond for hydraulic purposes and of discharging it after being used at the level of the pond below the head of Island No. 3; that such actions and intentions came to the knowledge of the defendant, and it at once and long before the completion of said canal gave notice to the said Kaukauna Water Power Company that it must not cut the bank of said pond nor withdraw any water therefrom, and that this defendant would hold the said company responsible in damages for cutting said bank and for withdrawing water from said pond into its said canal; that said Kaukauna Water Power Company, notwithstanding such notice, proceeded to construct said canal, and, having the benefit of the experience of the water power and mill-owners on the river up to that time, constructed a canal much deeper and wider than the canal so constructed by the Fox and Wisconsin Improvement Company (which canal, for convenience, [illegible]l the south canal) and constructed the same deeper, as afor[illegible], so as to draw the water from the pond at a lower level than this defendant and its tenants are able to draw it from the pond through the north or Government canal; that at the same time it filled up a portion of the bed of the river on the south side below the dam and built therein a dam across the head of the south channel of the river, so as to shut the water out of that channel, and excavated the said south channel much wider and deeper than it theretofore had been and made it into a tail race, into which the water after it has been used and passed through the mills constructed upon said south canal could be discharged. After having completed such canal-work, notwithstanding such notice, the said water power company cut the bank of the pond above the said Kaukauna dam, so as to draw the
861 water from the pond into said south canal, and thereafter leased the water from said pond to be drawn through said south canal to those of the defendants in this suit who are tenants of said Kaukauna Water Power Company and who have built large and costly mills upon said south canal, to be driven by the water drawn from said pond through said south canal and discharged into the bed of said south channel as a tail race; that there is no other

tail race for said mills than the bed of said south channel so widened and deepened as aforesaid, nor is there room for another, nor can it be made available without a large expenditure of money.

This defendant further shows that said Kaukauna Water Power Company has so leased to be used and there has been used from said canal ever since the said defendant, The Kaukauna Water Power Company, cut the bank of said pond and let the water into said south canal a large amount of water, which has been drawn and used through the mills of the said defendants, tenants of said Kaukauna Water Power Company, and discharged through such mills into the said south channel, so enlarged as a tail race, and which water was so used at the level of said pond and was so discharged below the head of Island No. 3, precisely how much water this defendant cannot state, but it charges that the said company has leased and its tenants have drawn from said south canal nearly the half of the average low-water flow of the river and nearly the amount leased and used by the tenants of this defendant through the north or Government canal and very much more than the forty-two two-hundredths of the flow of the river due to the south channel.

And this defendant further shows that the present wheel capacity of the mills on the south canal is 98.280 cubic feet per minute and the capacity of the wheels on the Government canal is 109.906 cubic feet per minute.

This defendant further shows that shortly after the said defendant so cut said embankment and commenced drawing water
862 from said pond this defendant commenced a suit against the defendant The Kaukauna Water Power Company and others, its tenants, as defendants, which is the same case reported in the 70th volume of Wis. Reports, page 635, and that such proceedings were had in said suit that a judgment was entered against the said Kaukauna Water Power Company in favor of this defendant by the circuit court of Outagamie county perpetually enjoining said Kaukauna Water Power Company from drawing water from said pond, which judgment was affirmed by the Supreme Court of the United States and which suit is reported in 142nd volume of U. S. Reports, page 254; that the result of that judgment was that the Kaukauna Water Power Company could no longer use the canal so constructed by it, as aforesaid, and was no longer able to draw water from the same to supply its tenants who had erected their mills on the line of their canal, and that the value of such investment therefore became greatly impaired; that pending the last-named suit the said Kaukauna Water Power Company impleaded this defendant in an action to compell it to restore the waters of the pond to the river at the foot of the dam and above the mouth of the south channel of the river, which action is still pending and undetermined; that in view of such difficulties negotiation was commenced between this defendant and the defendant The Kaukauna Water Power Company as to the leasing by this *plaintiff* to the Kaukauna Water Power Company of water to be drawn from the pond and used through the Kaukauna Water Power Company's canal;

that the parties at once disagreed as to their respective rights in the premises, this defendant claiming that it was entitled to the whole water of the river and the benefit of the fall thereof, as claimed in its first cross-bill and as adjudged by the superior court, and that if the Kaukauna Water Power Company used water from the pond that it must pay for the whole fall of the water used or at least for the fall of water at the dam. The Kaukauna Water Power Company, on the other hand, claimed that this defendant had no right to draw water from the said pond through the
863 *the* north or Government canal and use it and lease it to its tenants, and unless it restores the water to the river at the foot of the dam so that it should spread itself over the whole bed of the river as it did in the course of nature before any improvements were made *and* that the whole water from the pond must be restored to the river at the foot of the dam; that in view of these difficulties this defendant, after the affirmance of said judgment, permitted the Kaukauna Water Power Company to draw water from the pond into the south canal, to be drawn and used in the mills of the tenants of the Kaukauna Water Power Company, with the understanding that the amount to be paid for such use should be adjusted between this company and the Kaukauna Water Power Company and paid by it when the said claims of the parties had been litigated, and with the expectation that when the rights of the parties were authoratatively ascertained some sort of agreement should be made under which the company would lease to the Kaukauna Water Power Company water from the pond to be drawn into its canal and leased to its tenants; that under this understanding this defendant permitted the Kaukauna Water Power Company to continue drawing water out of the pond into the south canal; that the south canal is adapted to draw water from the river at a lower level than the Government canal; that when water is drawn below the crest of the dam the depth of the Government canal is correspondingly diminished and the velocity of the current in the canal occasioned by the drawing of water through it is correspondingly increased; that there has been an understanding for a considerable time between this defendant and its tenants and persons navigating the said river and canal that when the latter approach this level of the canal in question they should blow their whistles and thereby warn the mill-owners of *the* their approach in time, so that if the water was drawn below the head of the crest of the dam or so rapidly as to impair the navigation that the mills might shut down and increase the depth of the water in the canal
864 and pond and diminish the current so that vessels could readily pass; that the defendant The Kaukauna Water Power Company and its tenants declined to respond to such signals so given by boats by shutting down their mills and continued to draw water from the pond, so that the tenants of this defendant, whose right to draw water from the pond is prior to the permission of this defendant to the Kaukauna Water Power Company, would be obliged to shut down much longer than they would have been obliged to had the tenants of the Kaukauna Water Power Company

obeyed such signal and shut down, and thereby vexatious and unnecessary delays were ensued in the operation of the mills of the tenants of this defendant, notwithstanding said tenants had the prior right to draw water; that this defendant notified the Kaukauna Water Power Company of such trouble from time to time and was by it promised that the failure to respond to signals should be remedied; that it was not so remedied, and the matters so continued until in the spring of the present year the water in the river became very low and the disputes between the tenants of this defendant and the tenants of the Kaukauna Water Power Company became more frequent and violent, and the tenants of the Kaukauna Water Power Company openly declared that they had leased water from the Kaukauna Water Power Company, and as long as it was there in the canal they were going to use it, entirely irrespective of the delay and difficulty that it caused the tenants of this defendant or the parties navigating the river; that although this defendant again notified the Kaukauna Water Power Company of the trouble no relief came, and thereupon this defendant served the permanent injunction contained in the judgment of the circuit court of Outagamie county in the case of The Green Bay & Mississippi Canal Company against The Kaukauna Water Power Company and others, which is the same case reported as aforesaid in the 70th volume of Wisconsin Reports; that said water power company, in obedience to that injunction, closed the head-gates to its canal on or about the last of May, 1895, and they still remain closed.

865 That by reason of the premises the said defendant, The Kaukauna Water Power Company, gives out and maintains that it is entitled to have the whole flow of the river interrupted by said Kaukauna dam returned to the river at the foot of the dam, so that it may flow along the land of the said company on the south side of the river, and that this defendant is not of right entitled to draw any water into said north or Government canal, to be drawn therefrom for hydraulic purposes.

That such contention has, to some extent, already embarrassed this defendant in negotiating new leases of water power to be used from said canal, and is likely, under the uncertainty of the opinion of the supreme court in this case, to cause greater embarrassment in negotiating such new leases as this defendant is able to make in the future; that the water power is valuable only to this defendant to lease to others; that it is not able under its charter to enter into the business of manufacturing, in which to use such power; that it will be impossible hereafter to lease water for new enterprises on the river until a judicial determination of the validity of the claims of said Kaukauna Water Power Company shall be had; that no person will erect mills upon such power as long as such uncertainty exists.

This defendant therefore prays judgment of the court as it has heretofore prayed, and, further, that it is and of right ought to be entitled to draw from said pond through said north canal and through openings in the banks thereof over said water-power lots one-half of the surplus water of the river to be used in mills and in

such other way as it shall see fit, provided it shall discharge the same into the river, so that at least sixty-two two-hundredths thereof shall come into the middle channel of said river either of its own fall or momentum or through appliances to be erected by this defendant in the bed of said stream on its own land or on the land of the plaintiff and the other owners of the banks of said middle
866 channel at its own proper cost, and to that end it is authorized to enter upon the bed of said river on the south side of the thread thereof and the bed of said middle channel and construct and maintain appliances fit for that purpose.

And that it is entitled to draw the other half of the surplus of said pond for hydraulic purposes, provided it shall cause the same to be discharged upon the south half of the bed of said stream at the foot of said dam and erect and maintain proper dams on the bed of the south channel to cause the same to come to the south bank of said stream and to the south channel of the river in the proportion due to said channel.

And that in case a dispute shall arise as to the sufficiency of such appliances either party aggrieved may apply to this court at the foot of this judgment from time to time, as such party shall be advised.

But to the allowance of the same all of the other parties to said action not tenants of said company objected that no amendment of the pleadings was proper at this stage of the action;

Second, that no sufficient notice had been given of this application; and,

Third, that there was no new matter contained in the proposed amendment.

And thereupon the Hon. R. N. Austin, judge of the superior court, ruled and decided that no amendment of the pleadings was allowable at this stage of the action; to which ruling and decision the said Stevens and Mariner duly excepted; and thereupon the said plaintiffs, by Messrs. Hooper and Hooper, their attorneys, and the said Kaukauna Water Power Company and its tenants, by Messrs. Fish, Cary, and Ordway, their attorneys, and the Messrs. Hewitt, by Mr. Ordway, their attorney, moved for final judgment in this action upon the record and the remittiturs of the supreme court on file in this action.

And thereupon Mr. Ordway, as counsel for the defendants The Kaukauna Water Power Company and the Messrs. Hewitt,
867 moved the court to ruled and decide that a portion of the judgment theretofore entered in this court was not appealed from, and that such portion should stand and remain as a separate judgment in that behalf, speaking from the date of its entry, and that any judgment which the court should now render should be an additional judgment to the portion of judgment theretofore entered; to which the Green Bay and Mississippi Canal Company, by its attorneys, objected, and the Hon. R. H. Austin, judge of said court, decided that under the statute and the remittiturs of the court he could enter only one judgment covering all the issues in the case, which should stand and be the judgment in the case; and thereafter, the said motions having been argued and submitted by said

counsel, including the said counsel for said Green Bay and Mississippi Canal Company, and the court having taken time to consider the same, to wit, on the 27th day of September, the court entered judgment, and because the said exceptions and the matters aforesaid do not appear of record, and the same are all of the proceedings had at said hearing, I, R. N. Austin, judge of said court, have, at the request of the Green Bay and Mississippi Canal Company, hereunto set my hand and seal this 18th day of November, 1895.

R. N. AUSTIN, *Judge.*

Endorsement: Superior court, Milwaukee Co. Patten Paper Co. *et al. vs.* The Green Bay & Mississippi Canal Co. *et al.* Bill of exceptions. E. Mariner & B. J. Stevens, att'ys for the G. B. & Miss. Canal Co. Served Oct. 28, '95. David S. Ordway, att'y for Hewitts. Fish & Cary, att'ys for Kaukauna Water Power Company. Filed Nov. 18, 1895. A. W. Hill, clerk.

868 In Superior Court, Milwaukee County.

PATTEN PAPER COMPANY (LIMITED) *et al.*
vs.
KAUKAUNA WATER POWER COMPANY, GREEN BAY & MISSISSIPPI CANAL COMPANY, *et al.*, Defendants,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Cross-complaint.

On request of the defendant Kaukauna Water Power Company it is hereby stipulated and agreed that the attorneys for the defendants in said cross-complaint may withdraw from the files in said court all the original depositions, testimony, documents, and stipulations produced in evidence upon the trial and hearing of said action, and also the original requests for findings refused by the judge before whom said action was tried, and all exceptions taken and filed by the defendants in said cross-complaint to the findings of fact or conclusions of law, to use and embody the same in the bill of exceptions which said defendants desire to settle in and make part of the record in this action preparatory to an appeal from the judgment entered therein.

All this to save the necessity of copying the same and save labor in the perfecting of said record on appeal.

Dated this 23rd day of January, A. D. 1894.

B. J. STEVENS &
E. MARINER,
Attorneys for the Green Bay & Miss. Canal Co.

869 Endorsement: 2726. In superior court of Milwaukee county. Patten Paper Company (Limited) *et al. vs.* Kaukauna Water Power Company, Green Bay & Miss. Canal Co., *et al.* Stipulation as to making up bill of exceptions. The clerk is at liberty to allow the taking of the papers within named for the purposes mentioned. R. N. Austin, judge. Filed Jan. 24, 1894. F. C. Lorenz, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

870 STATE OF WISCONSIN:

In the Superior Court of the County of Milwaukee.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY *et al.*, Defendants,

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Defendants in Cross-complaint.

This matter coming on to be heard upon the application of the Green Bay and Mississippi Canal Company to fix the amount at which sureties on the undertaking shall justify, in order to stay proceedings under and the execution of the judgment entered herein on the 27th day of September, 1895, pending an appeal from a part thereof to the supreme court, and after hearing B. J. Stevens, attorney for the canal company, and Messrs. Fish and Cary and Ordway, attorneys and of counsel for the parties opposed—

On motion of B. J. Stevens, it is ordered that the sureties to the undertaking shall justify in the sum of at least $10,000, and that the form of undertaking submitted to the court be, and the same is, approved.

Dated October 31st, 1895.

By the court:

R. N. AUSTIN, *Judge.*

871 Endorsement: 2726. In superior ct., Milw. Co. Patten Paper Co., Limited, pl'ffs, *v.* Kaukauna W. P. Co. *et al.*, def'ts, and Green Bay & M. C. Co., pl'ffs in cross-action, *v.* Patten Paper Co., Limited, def'ts in cross-action. Order fixing amount for justification sureties on appeal. B. J. Stevens & E. Mariner, att'ys for canal Co. Filed Oct. 31, 1896. A. W. Hill, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk supreme court Wis.

872 STATE OF WISCONSIN:

In Superior Court, County of Milwaukee.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. Edwards, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and Milwaukee, Lake Shore & Western Railway Company, Defendants,

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,

against

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

873 SIRS: Please take notice that The Green Bay & Mississippi Canal Company, defendant in the original action above entitled and plaintiff in the cross-action above entitled, hereby appeals to the supreme court of the State of Wisconsin from the parts of the judgment rendered and entered in said actions in the superior court of the county of Milwaukee, State of Wisconsin, on the 27th day of September, A. D. 1895, upon the issues formed in the original action in favor of the plaintiffs therein named against all of the defendants therein named, and upon the issues formed in the cross-action in favor of the defendants therein, who are appellants to the supreme court from portions of a previous judgment heretofore entered in said actions in the said superior court, to wit, rendered and entered on the nineteenth day of January, A. D. 1894, as follows, to wit:

The said company so appeals from the paragraphs of said judgment numbered "first," "second," and "third" and from each of such paragraphs and from each and every part of each of such paragraphs numbered "first," "second," and "third," and especially from such parts of such paragraphs, if any, as require the Green Bay & Mississippi Canal Company to turn the water appurtenant to the north bank or side of the river into the river at the foot of the dam, or as enjoins the said company from drawing so much or any part of the water of the pond appurtenant to the said north bank or side into

the canal leading therefrom, or as require said company to permit so much of the water of the river as is appurtenant to the north bank to be returned to the river in such manner and at such place as not to deprive the appellants hereinbefore mentioned or those claiming under them or through them of its use as it has been accustomed to flow past their banks and so that it shall flow past the lands of the appellants (in the appeals from the first judgment aforesaid, and in the several channels of said river below said dam as it was accustomed to flow and so that said appellants (in the
874 appeals from the first judgment aforesaid) shall have the right to use the water of said river (except such as is or may be necessary for navigation) as it was wont to run in a state of nature without material alteration or diminution.

And the said company further so appeals from so much of the paragraph numbered "fourth" in said judgment as is embraced in the words "except as hereinbefore adjudged," the contention being that the exception should not be of the adjudications embraced in paragraphs "first," "second," and "third" as they now stand in the judgment, but should be of such matters as they shall be finally adjudged after review in the supreme court.

The said company does not appeal from paragraphs "fifth," "sixth," and "seventh" of the judgment.

Dated the 31st day of October, A. D. 1895.

B. J. STEVENS
(*Madison, Wisconsin*) *and*
E. MARINER,
(*Milwaukee, Wisconsin*),
Defendants' Attorneys.

To the clerk of the superior court of Milwaukee county, Wisconsin.

To Mess. Hooper & Hooper (Oshkosh, Wisconsin), attorneys, and George C. Green, Esq. (Green Bay, Wis.), of counsel for the plaintiffs in the above-entitled original action, and

To Mess. Fish & Cary (Milwaukee, Wis.), attorneys, and David S. Ordway (Milwaukee, Wis.), of counsel for the appellants from portions of the first judgment, Kaukauna Water Power Company *et al.*, and

To David S. Ordway, Esq. (Milwaukee, Wis.), attorney for appellants Henry Hewitt, Jr., and William P. Hewitt.

875 STATE OF WISCONSIN:

In Superior Court, County of Milwaukee.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Plaintiffs,

vs.

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, HARRIET S. EDWARDS, The Green Bay & Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and Milwaukee, Lake Shore & Western Railway Company, Defendants,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,

vs.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, FOX River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint.

Whereas on the 27th day of September, A. D. 1895, in the superior court of Milwaukee county, Wisconsin, a judgment was rendered and entered in the main and cross actions above entitled upon three separate appeals taken by the plaintiffs in the main action and certain of the defendants therein, all such appeals mentioned and at large stated in the said judgment, to which reference is here made, and was so rendered and entered in favor of such appellants and against the Green Bay & Mississippi Canal Company, one of the defendants in the said main action and plaintiff in the said
876 cross-action, and whereby, among other things, it was adjudged in substance that all of the waters of the river except those required for purposes of navigation be apportioned to the south, middle, and north channels of the river in the apportionments and otherwise as stated in said judgment, and that each of the parties to said action, their heirs, successors, and assigns, be enjoined from interfering with the waters of said river so as to prevent their flowing into the said channels in the proportions aforesaid; that the water power created incidentally for the erection of the dam at Kaukauna is due to the gravity of the water as it falls from the crest to the foot of the dam proper, and not to the use of the water through said canal, and that neither the State nor the Green Bay & Mississippi Canal Company ever acquired or owned any water

power upon said river at Kaukauna by reason of or as incidental to the construction and use of said canal for navigation, and that the said canal company, its successors and assigns, shall so use the water power, if at all, created by said dam as that all the water used for water-power or hydraulic purposes shall be returned to the stream in such a manner and at such place as not to deprive the appellants or those claiming under or through them of its use as it had been accustomed to flow past their banks, and that it shall flow past the lands of said appellants on said river and in the several channels of said river below said dam as it was accustomed to flow, and that said appellants have the right to use the water of said river except such as is or may be necessary for navigation as it was wont to run in a state of nature, without material alteration or diminution, and otherwise as in said judgment stated, to which judgment reference is here made as a part hereof; and the above-named appellants, The Green Bay & Mississippi Canal Company, feeling aggrieved thereby, intends to appeal from portions of said judgment, more particularly the portions above specified, to the supreme court of the State of Wisconsin:

877 Now, therefore, we, The Green Bay & Mississippi Canal Company, appellant, and John S. Van Nortwick, of the city of Appleton, county of Outagamie and State of Wisconsin, and William M. Van Nortwick, of the city of Batavia, county of Kane and State of Illinois, do hereby, pursuant to the statute in such case made and provided, undertake that the said Green Bay & Mississippi Canal Company, appellant, will pay all costs and damages which may be awarded against it, the said appellant, on such appeal, not exceeding two hundred and fifty dollars ($250.00), and do also undertake that the said canal company, the appellant, will pay all damages which the opposite parties, to wit, the appellants aforesaid, may have sustained or may sustain by the failure, neglect, or omission, if any such, of The Green Bay & Mississippi Canal Company, appellant, to turn all of the waters of the river excepting such as is or may be necessary for navigation into the river in such a manner and at such place below the dam as not to prevent its flowing in the channels below said dam past the lands of the appellants aforesaid as it was accustomed to flow and wont to run in a state of nature, without material alteration or diminution, and otherwise to comply with the requirements and provisions of said judgment, to which reference is made as a part hereof.

GREEN BAY & MISSISSIPPI CANAL COMPANY,
By B. J. STEVENS, *Attorney.*
JOHN S. VAN NORTWICK, *V. P.*
WILLIAM M. VAN NORTWICK.

STATE OF WISCONSIN, } ss:
County of Outagamie, }

John S. Van Nortwick, being duly sworn, deposes and says that he is one of the subscribers to the foregoing undertaking; that he

is a resident and freeholder of the State of Wisconsin, and that he is worth the sum of at least ten thousand dollars over and above all his debts and liabilities in property within the State of Wisconsin not by law exempt from execution.

JOHN S. VAN NORTWICK, *Vice-Pres't.*

Subscribed and sworn to before me this 31st day of October, A. D. 1895.

JACOB T. JAGODNIGG,
[SEAL.] *Notary Public, Wis.*

878 STATE OF WISCONSIN, } ss:
County of Milwaukee, }

William M. Van Nortwick, being duly sworn, deposes and says that he is one of the subscribers to the foregoing undertaking; that he is a resident of the State of Illinois, and that he is worth the sum of at least ten thousand dollars over and above all his debts and liabilities in property within the State of Wisconsin not by law exempt from execution.

WILLIAM M. VAN NORTWICK.

Subscribed and sworn to before me this 31st day of October, A. D. 1895.

JOHN W. MARINER,
Notary Public, Milwaukee Co., Wis.

Endorsement: 2726. In superior court, county of Milwaukee. Patten Paper Company, Limited, *et al.*, pl'ffs, *v.* Kaukauna Water Power Company *et al.*, def'ts, and Green Bay & Miss. Canal Co., pl'ff in cross-action, *v.* Patten Paper Company, Limited, *et al.*, def'ts in cross-action. Notice of appeal by Green Bay & Miss. C. Co. and undertaking on appeal. B. J. Stevens & E. Mariner, att'ys for canal Co. Filed Nov. 2, 1895. A. W. Hill, clerk. Filed Nov. 23, 1895. Clarence Kellogg, clerk of supreme court Wis.

879 STATE OF WISCONSIN, } ss:
Superior Court, Milwaukee County, }

PATTEN PAPER CO., LIMITED, *et al.*, Pl'ffs,
vs.
KAUKAUNA WATER POWER CO. *et al.*, Defendants,

and

GREEN BAY & MISSISSIPPI CANAL CO. *et al.*, Pl'ffs in Cross-comp.,
vs.
PATTEN PAPER CO. (LIMITED) *et al.*, Def'ts in Cross-complaint.

MILWAUKEE COUNTY, ss:

I, A. W. Hill, clerk of the superior court in and for the county of Milwaukee and State of Wisconsin, do hereby certify that the process, pleadings, and other papers hereunto annexed, constituting the

judgment-roll, plats, specifications, maps, and other records, are the originals and all the papers filed in the above-entitled action, and that the same are herewith transmitted to the supreme court of the State of Wisconsin pursuant to notice of appeal hereto annexed, and that the second bill of exceptions, filed Nov. 18, 1895, is herewith transmitted pursuant to an order of court dated Oct. 31, 1895, and hereto attached.

In testimony whereof I have hereunto set my hand and
[SEAL.] affixed the seal of said superior court, at Milwaukee, this 18th day of November, 1895.

A. W. HILL,
Clerk of the Superior Court, Milwaukee County, Wis.

Endorsement: Superior court, Milwaukee county. Patten Paper Co., Limited, *et al.*, pl'ff-, *vs.* Kaukauna Water Power Co. *et al.*, def'ts, and Green Bay & Miss. Canal Co., pl'ff in cross-complaint, *vs.* Patten Paper Co., Limited, *et al.*, def'ts in cross-complaint. Return on appeal to supreme court of the State of Wisconsin. Filed Nov. 23, 1895. Clarence Kellogg, clerk of the supreme court Wis.

880 And afterwards, to wit, on the tenth day of January, A. D. 1896, the same being the fourth day of said term, the following proceedings were had in this court in this cause—that is to say:

PATTEN PAPER COMPANY *et al.*, Plaintiffs and Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL CO., Impl'd, &c., Defendant and Appellant,
(Original Action.)

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
vs.
PATTEN PAPER COMPANY (LIMITED) *et al.*, Impleaded, &c., Def'ts in Cross-complaint.
(Cross-action.)

Appeal from Milwaukee superior court.

And now, at this day, came the said respondents, by their attorneys, and moved the court now here to dismiss the appeal in this cause for reasons as set forth in and by their motion papers, to wit:

(Title.)

To Ephraim Mariner and B. J. Stevens, Esquires, attorneys for appellant, Green Bay & Mississippi Canal Company.

SIRS: Please take notice that we shall apply to the supreme court of the State of Wisconsin, at its court-room, in the capitol, at the city of Madison, in said State, on Friday, the 10th day of
881 January, 1896, at the opening of the court on that day or as soon thereafter as counsel can be heard, for an order dismiss-

ing the above-entitled appeal for the reason that the said judgment from parts of which said appeal was taken was entered by said superior court of Milwaukee county in accordance with and in execution of the mandates or remittiturs of said supreme court issued on three previous contemporaneous appeals and directed to said superior court and is in fact and effect the judgment of said supreme court, and for the additional reason that no error is shown by the bill of exceptions settled upon the application of said canal company on or for said appeal.

That said motion will be based upon all the records, papers, and proceedings on file in said supreme court in said appeal, copies of parts of which are hereto annexed, and also upon the records, opinions, and mandates or remittiturs of said supreme court in said three previous appeals.

Yours, &c.,

MOSES HOOPER,
HOOPER & HOOPER,
Attorneys for Respondents Patten Paper Company (Limited), Union Pulp Company, and Fox River Pulp and Paper Company.
FISH & CARY,
Attorneys for Respondents Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Milwaukee, Lake Shore & Western Railway Company, G. Lind, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, and Michael A. Hunt.

DAVID S. ORDWAY, *Of Counsel.*

DAVID S. ORDWAY,
Attorney for Respondents Henry Hewitt, Jr., and William P. Hewitt.

882 Which motion having been argued by Messrs. John T. Fish, Moses Hooper, David S. Ordway, and George G. Greene for the said respondents and by Messrs. B. J. Stevens and E. Mariner for the said appellant and submitted and the court, not being now sufficiently advised of and concerning its decision herein, took time to consider of the same.

883 And afterwards, to wit, on the tenth day of March, A. D. 1896, the same being the twentieth day of said term, the following judgment or order was rendered in said cause by said court in the words and figures following—that is to say:

Milwaukee Superior Court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL COMPANY, Impl'd, &c., Appellant.

The court being now fully advised of and concerning the motion of the said respondents to dismiss the appeal in this cause, it is now here ordered and adjudged by this court that the said motion be, and the same is hereby, granted, and that the appeal in this cause be, and the same is hereby, dismissed with costs against the said appellant, taxed at the sum of seventy-six and $\frac{80}{100}$ dollars ($76.80).

884 Upon the rendition of the above judgment or order the following opinion of the court, by Chief Justice Cassoday, was filed herein in the words and figures following—that is to say:

In Supreme Court, State of Wisconsin.

PATTEN PAPER CO. *et al.*, Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL CO., Impleaded with Others, Appellant.

CASSODAY, *C. J.*:

This case was here upon former appeals. 90 Wis., 370. Those appeals were by three of the defendants in the cross-bill filed by the canal Co. from so much and such part of the judgment of the trial court as sustained the paramount right of the canal Co. to all the water power created by the Government dam at Kaukauna and the exclusive right to use or authorize others to use the same wherever it might be available for water power and to return the water to the river wherever it should see fit, but the balance of that judgment, relating, as it did, to the partition of the water power between the several riparian owners below the dam, had been entered by agreement and stipulation between such riparian owners, including the canal Co., and from those portions of the judgment there had been no appeal, and hence the same were never before this court for consideration. The portion of the judgment thus appealed from was thoroughly argued by able counsel on all sides, and then, after careful consideration and decision, was again reargued and again decided with the following mandate: "The judgment of the superior court of Milwaukee county is reversed upon each of the three appeals as to those parts of the judgment which were appealed from, and the cause is remanded with direction to enter judgment in accordance
885 with the opinion." 90 Wis., 404. Upon the remittiturs being filed the canal Co. asked leave of the trial court to amend its cross-bill in certain respects or to allege the same facts by way of defense and counter-claim to the original complaint for the

partition of the water power below the dam. The trial court held that no such amendment was allowable at that stage of the case. Thereupon and September 27, 1895, the trial court entered final judgment in pursuance of the mandate of this court. The canal Co. has, in effect, appealed from the parts of that judgment upon the issues formed in the original action in favor of the plaintiffs therein and against the defendants therein, and also that part of the judgment upon the issues in the cross-action in favor of the defendants therein who appealed to this court, and also the first, second, and third subdivisions thereof, and especially from such parts of the judgment, if any, as require the canal Co. to return the water in excess of that required for navigation from the canal to the river, either at the dam or in such place and in such manner as not to deprive the respondents herein and those claiming under or through them of its use as it had been accustomed to flow past their banks. The respondents now move to dismiss the appeal on the ground that the judgment entered is in exact accordance with the mandate of this court. Counsel for the appellant contend that the judgment is not in exact accordance with the two opinions of this court, and hence not in exact accordance with the mandate. We perceive no inconsistency in the two opinions, but if there is any the one on the motions for reargument, being last, would prevail. Mr. Justice Newman wrote both opinions, and in the last he construes the first, and in effect said: "This court held that the canal Co. owned all the water power which was created by the construction and operation of the Government dam at Kaukauna; that it had the right to use all the water of the stream not used for the purposes
886 of navigation for the purposes of power wherever it could or choose, so far as it could do so without impairing the just rights of other owners of water powers upon the stream; that it was due to other owners of water powers below the dam that the water, after being used by it, should be returned to the stream at such place and in such manner as it shall flow past the banks of such lower owners in its accustomed channels and as it was accustomed aforetime to flow. The limit to its right is at the point where it infringes upon the rights of others. It concedes to it all the rights which the State had or could acquire as against such lower owners. The place where it may use the water for power is restricted only by its duty to refrain from injuring others. The court is satisfied of the correctness and justice of its judgment." 90 Wis., 403. This is the very gist of both the opinions and the decision. It is substantially embraced in the judgment before us. It seems to be as definite and certain as language can make it without fixing the limit by survey and metes and bounds. Certainly we did something more than determine that the canal Co. was not entitled to the whole water of the river as contended by counsel; so it is very obvious that counsel is in error in claiming that the right of the "canal Co. to draw water through the canal as riparian proprietor" had not been considered by this court. This court had no power upon the former appeal and has no power now to leave open and undecided matters which were determined in the portions of the

first judgment not appealed from. It would be an idle provision to insert in the judgment that the cross-bill was dismissed without prejudice as to questions not determined by the trial court or this court in the judgment before us on the former appeal, and it would have been improper to insert therein that the judgment was without prejudice as to questions determined in the first judgment and not appealed
887 from or determined by this court on such appeal. After careful consideration we are constrained to hold that the judgment entered is a substantial compliance with the mandate of this court. Certainly it would have been improper to allow any amendment to pleadings or new litigation. The mandate was not for a new trial, nor for further proceedings according to law, but "with direction to enter judgment in accordance with the opinion," and the opinion left nothing undetermined. This left nothing for the trial court to do in the case except to enter judgment therein as directed. Sec. 3071, R. S.; Mowry *v.* First National Bank, 66 Wis., 539; Jones *v.* Jones, 71 Wis., 513; Whitney *v.* Traynor, 76 Wis., 628; Chouteau *v.* Allen, 74 Mo., 56; Strump *v.* Hornback, 109 Mo., 277; Young *v.* Thrasher, 123 Mo., 308. This we think it has done. Such being the record, the question recurs whether this appeal should be entertained or dismissed. We are clearly of the opinion that a judgment entered, as this was, in substantial accordance with the mandate of this court is, in legal effect, the judgment of this court. It is just as effectually *res adjudicata* as in a case where the judgment is affirmed. Reed *v.* Jones, 8 Wis., 412. In such a case this court has held that the proper practice is to dismiss the appeal. Kluender *v.* Fenske, 59 Wis., 35. We must hold that a judgment entered in substantial accordance with the mandate of this court upon a previous appeal must, upon motion of the respondent, be dismissed. Stewart *v.* Salamon, 97 U. S., 361; Humphrey *v.* Baker, 103 U. S., 736; Mackall *v.* Richards, 116 U. S., 45; Texas & Pacific R'y Co. *v.* Anderson, 149 U. S., 237; Aspen Mining & S. Co. *v.* Billings, 150 U. S., 31. It has been held in the Supreme Court of the United States that compliance with a mandate of that court which left nothing to the judgment or discretion of the trial court might be enforced by mandamus. City Bank of Fort Worth *v.* Hunter,
888 152 U. S., 512. The appeal from the judgment of the superior court for Milwaukee county is dismissed.

(Endorsements:) No. 67. January term, 1896. Patten Paper Co. *et al.*, respondents, *vs.* Green Bay and Miss. Canal Co., impleaded with others, appellant-. Opinion. Cassoday, C. J. Filed March 10, 1896. Clarence Kellogg, clerk of supreme court Wis.

889 And afterwards, to wit, on the first day of May, A. D. 1896, the same being the thirty-fourth of said term, the following further proceedings were had in this said cause in this said court in the words and figures following—that is to say:

PATTEN PAPER COMPANY (LIMITED), UNION PULP Company, and Fox River Pulp and Paper Company, Respondents,
vs.
GREEN BAY & MISSISSIPPI CANAL COMPANY, Impleaded, etc., Appellants,
} Original Action.

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Appellant,
vs.
PATTEN PAPER COMPANY (LIMITED), *et al.*, Respondents.
} Cross-action.

And now, at this day, came the said Green Bay & Mississippi Canal Company, appellant, by its attorneys, and moved the court now here to vacate the judgment or order entered herein March 10, 1896, and to reinstate this cause in this court, which motion having been argued by Mess. B. J. Stevens and E. Mariner, for said appellants, and Moses Hooper, Esq., for the said respondents, and submitted, and the court, not being sufficiently advised of and concerning its decision herein, took time to consider of the same, and which motion is in the words and figures following—that is to say:

890 STATE OF WISCONSIN:

In Supreme Court, January Term, 1896.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs and Respondents,
against
KAUKAUNA WATER POWER COMPANY and Others, Defendants and Respondents,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff and Appellant in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED) and Others, Defendants and Respondents in Cross-complaint.

Motion to Vacate Order of March 10, 1896, Dismissing Canal Company's Appeal Herein, and Notice Thereof.

B. J. Stevens, Madison, Wis.; E. Mariner, Milwaukee, Wis., attorneys for appellant, The Green Bay & Miss. Canal Company.

Filed April 21, 1896.

W. J. PETHERICK,
Deputy Clerk of Sup. Court Wis.

890*a* STATE OF WISCONSIN:

In Supreme Court, January Term, 1896.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and Fox River Pulp and Paper Company, Plaintiffs and Respondents,

against

KAUKAUNA WATER POWER COMPANY, MATTHEW J. MEADE, Harriet S. Edwards, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company and Milwaukee, Lake Shore & Western Railway Company, Defendants and Respondents,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff and Appellant in Cross-complaint,

against

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants and Respondents in Cross-complaint.

890*b* And now comes The Green Bay & Mississippi Canal Company, defendant in the original action above entitled, and plaintiff in the cross-action above entitled, by B. J. Stevens and E. Mariner, its attorneys, and in the nature of a motion for rehearing and to correct mistakes in the record, moves the court to vacate its order or judgment in the above-entitled actions, entered on the 10th day of March, A. D. 1896, dismissing said canal company's appeal therein, and to reinstate such appeal in that the same was made and entered erroneously on the following among other grounds:

First. The court erred in holding as follows (66 N. W. 601):

"Thereupon on September 27, 1895, the trial court entered final judgment in pursuance of the mandate of this court" * * * (p. 602). "We perceive no inconsistency in the two opinions, but if there is any, the one on the motion for reargument, being last, would prevail." * * * (Here follows an excerpt from one of the opinions.) * * * "This is the very gist of both the opinions and the decision. It is substantially embraced in the judgment before us. It seems to be as definite and certain as language can make it without fixing the limit by survey and metes and bounds." * * * "After careful consideration we are constrained to hold that the judgment entered is a substantial compliance with the mandate of this court."

Whereas the judgment appealed from, either in fact or as interpreted by the respondents, was not entered "in pursuance of the mandate of this court," and the gist of "both the opinions" was not "substantially embraced in the judgment."

The judgment of the superior court first entered, to wit, entered on January 19, 1894, and misstated in the several opinions of this court, has evidently been misapprehended. It is not true, as stated by Judge Newman (11 N. W. 1019), that:

890c "An adjudication of these relative rights is included in the judgment of the trial court, and all parties are by it enjoined from interfering with the flow of the water in the several channels in the proportions adjudged to be the due of each channel. There is no appeal from this part of the judgment, so no consideration of it by this court is due or proper."

There was no adjudication of the rights of the canal company beyond its claim of right of prior use of the water appurtenant to the south bank. The water appurtenant to the north bank was not in controversy. There was no injunction whatever against the canal company's use of water in any of the channels of the river. The injunction ran only against "each of the other parties to this action" (other than the canal company), and enjoined them from interfering with those waters which were by the canal company "permitted to flow over the dam or into the river above Island No. 4, so as to prevent their flowing into said channels in the proportions aforesaid." (Motion to dismiss appeal, fol. 20.) It applies only to parties other than the canal company, and only to waters permitted to flow. And this is the only part of the first judgment not appealed from, and is the part referred to by Judge Newman by the words, "so no consideration of it by this court is due or proper."

And this is the part of the judgment referred to by Chief Justice Cassoday (66 N. W. 601) by the words:

"But the balance of that judgment, relating as it did to the partition of the water power between the several riparian owners below the dam, has been entered by agreement and stipulation between such riparian owners, including the canal company, and from those portions of the judgment there had been no appeal, and hence the same were never before this court for consideration." * * * (p. 602.) "This court had no power upon the former appeal,

890d and has no power now, to leave open and undecided matters which were determined in the portions of the first judgment not appealed from."

The part of the judgment referred to, the part affecting the "other parties" to the case and not affecting the canal company, is all of the first judgment that remains unappealed from, and is all there is of the judgment which must stand, because "never before this court for consideration." And that judgment does not run against the canal company. And the record does not support the statement that this judgment "had been entered by agreement and stipulation between such riparian owners," there being no such stipulation in the record.

The findings and conclusions of the court (Record, p. 134, fol. 400) sustain the judgment, and are to the effect that "the waters permitted by the United States and the canal company to flow below the dam" were to be apportioned; and (fol. 404) "the plaintiff is not entitled to a judgment" * * * "adjudging any portion of the entire natural flow of the waters of the Fox river to be appurtenant to or as of right belonging to the north, south *or* middle channel of said river below the dam, excepting such water as is permitted to escape over the dam, subject to the right of the canal company," etc.

There is no finding or conclusion of any right to enjoin the canal company of any use of the water.

The pleadings also sustain the judgment. They do not ask relief against the canal company, and if they did, it could not have been given according to the court's opinion. Four opinions of this court in this case have been filed: (1) 70 Wis. 659–669, February 28, '88; (2) 61 N. W. 1123, February 5, '95; (3) 63 N. W. 1019, June 20, '95; and (4) 66 N. W. 601, March 10, 1896. In the opinion filed June 20 '95 (63 N. W. 1020), the court say:

"The court is satisfied of the correctness and justice of its 890*c* judgment. It is not deemed to be inconsistent with anything previously stated or decided by this court, or to the decision of any other court to which attention has been called."

In the opinion filed February 28, '88 (70 Wis. 669), the court say:

"It is urged as one ground of demurrer that the complaint also states a separate cause of action against the Green Bay & Mississippi Canal Company, and for that reason the complaint is subject to the objection that several causes of action are improperly joined. We think this contention is not sustained by the facts stated. The complaint does not state that the diversion of the water from the north channel by the canal company into their canal has taken any of the water from the river which was accustomed to run through the middle channel. The allegations in the complaint, so far as they regard the canal company, would not, if proved, entitle the plaintiff to any damages or relief against said company. We think the demurrer cannot be sustained upon that ground by either of the defendants."

The allegations referred to were (70 Wis. 664):

"(13) That the Green Bay & Mississippi Canal Company has a canal leading from the said mill pond, maintained by said dam across Fox river above said Island No. 4, along in line with and north of the north bank of said Fox river, to a point below the head of said Island No. 3; that such canal is large enough to pass, and is intended to pass, at least one-half of the flow of said river, and to pass the same down said canal and into said river at a point below the head of Island No. 3, and so that the same cannot run and pass into the said middle channel, and so that the same cannot come into the mill pond formed between said Islands Nos. 4 and 3 by the dam from one to the other, and, during the past summer, has so passed about one-half the flow of said stream so that the same has not, and could

not, come into said mill pond between Islands Nos. 3 and 4, called the 'Mead & Edwards water power.' (14) That the Green Bay & Mississippi Canal Company, and its lessees and tenants, are, and have for several years been, and propose to and will continue, 890*f* drawing and passing through their canal on the north side of said river from the mill pond maintained by the dam above Island No. 4, to a point below the head of Island No. 3, and so that it cannot pass into said middle channel and into the mill pond furnishing water to plaintiff's mills, about one-half of the flow of the Fox river, and the half appurtenant to the said north channel."

And now the second judgment.—In the face of these allegations and the opinion of this court that "they would not, if proved, entitle the plaintiff to any damages or relief against said company," the court below (the superior court of Milwaukee county), claiming to act under the mandate of this court and evidently misled by the language of the opinions to which attention has been called, has entered its judgment of September 27, '95, which, among other things, adjudges (motion to dismiss appeal, fols. 31–34) "against all of the defendants" including the canal company): * * *

"First. * * * That all of the water of the river" * * * "shall be and is hereby divided and apportioned between and to the south, middle and north channels of the river," etc., etc., * * * "and each of the parties to this action" (including the canal company) "are forever enjoined from interfering with the waters of said river so as to prevent their flowing into said channels in the proportions aforesaid." * * * "Second. * * * That the water power * * * is due to the gravity of the water as it falls from the crest to the foot of the dam * * * and not to the use of the water * * * through said canal, and that neither said State * * * nor said * * * canal company * * * ever acquired or owned any water power upon * * * by reason of or as incidental to the construction and use of said canal for navigation;" and "Third. * * * That said * * * canal company * * * shall so use the water power, if at all, created by said dam as that all the water used for water power * * * shall be returned to the stream in such a manner and at such a place as not to deprive the appellants * * * of its use as it had 890*g* been accustomed to flow past their banks, and that it shall flow past the lands of said appellants * * * and in the several channels of said river below said dam as it was accustomed to flow, and that said appellants have the right to use the water of said river * * * as it was wont to run in a state of nature without material alteration or diminution."

Not one of the questions so adjudged was before the court for consideration as affecting the waters appurtenant to the north bank of the river—that is (in substance), affecting the water in use by the canal company—the waters used from the canal. This judgment, held by the chief justice to be in substantial compliance with the mandate of the court, that is, to follow the opinions of Judge Newman, has no basis whatsoever in the earlier judgment to rest upon

as against the canal company. It can rest on nothing other than the portions of opinions above quoted, which misstate the language and import of the earlier judgment.

It was the canal company's claim asserted in its cross-bill, and that only so far as it was carried into the earlier judgment, which was for consideration and was determined by the court; and this is embraced in the later judgment in the fourth paragraph, viz:

"Fourth. And it is further adjudged that the relief demanded in said cross-complaint be denied except as hereinbefore adjudged."

Says the chief justice (66 N. W. 602):

"Certainly we did something more than determine that the canal company was not entitled to the whole water of the river, as contended by counsel. So it is very obvious that counsel is in error in claiming that the right of the 'canal company to draw water through the canal as riparian proprietor' had not been considered by the court. This court had no power upon the former appeal, and has no power now, to leave open and undecided matters which
890*h* were determined in the portions of the first judgment not appealed from," etc.

Which is a clear misconception of the judgment referred to. There is no portion of the judgment affecting the canal company "not appealed from."

Says Judge Newman (63 N. W. 1019):

"The right of this contention of the Green Bay & Mississippi Canal Company was the only question presented by these appeals."

Second. The court erred in holding as follows (66 N. W. 601):

"The canal company has, in effect, appealed from the parts of that judgment (September 27, 1895) upon the issues formed in the original action in favor of the plaintiffs therein and against the defendants therein, and also that part of the judgment upon the issues in the cross-action in favor of the defendants therein who appealed to this court, and also the first, second and third subdivisions thereof, and specially from such parts of the judgment, if any, as require the canal company to return the water in excess of that required for navigation from the canal to the river, either at the dam or in such place and in such manner as not to deprive the respondents herein * * * of its use as it had been accustomed to flow past their banks."

Whereas the fact is, that the canal company's appeal (motion to dismiss appeal, fol. 91) was only from the first, second and third paragraphs, or so much of the same, if any, as require the canal company "to turn the water appurtenant to the north bank * * * into the river at the foot of the dam, or as enjoins the said company from drawing so much or any part of the water of the pond appurtenant to the said north bank or side into the canal leading therefrom, or as require said company to permit so much of the water of the river as is appurtenant to the north bank to be returned to the river in such manner and at such place as not to deprive the appellants hereinbefore mentioned (respondents) * * * of its use as it has been accustomed to flow past their banks," etc.

890*i* *Ex industria* the appeal was confined in its application to the waters appurtenant to the north bank, *i. e.*, to the waters which were not affected by the earlier judgment. The court's misapprehension of the appeal is not unlike, but corresponds to, its misapprehension of the judgments in question.

Third. The court erred in holding (66 N. W. 601) that the judgment of September 27, 1895, was a substantial compliance with the opinions, decision and mandate of the court, in the further respect, viz., that the judgment is inconsistent with the opinions and decision as follows: Says Judge Newman (61 N. W. 1123):

"It is settled by the decisions in Green Bay & M. Canal Co. *v.* Kaukauna Water Power Co., 70 Wis. 635, 35 N. W. 529, and 36 N. W. 828, and *id.*, 142 U. S. 254, * * * that * * * the Green Bay & Mississippi Canal Company is the legal owner of all the water power which has been created by the dam * * * beyond what is required for the purpose of navigation; and that it has all the right and title in that water power which the State acquired in it under section 16 of the act of 1848; and that such title amounts to entire and absolute ownership."

And again (63 N. W. 1019):

"This court held that the Green Bay & Mississippi Canal Company owned all the water power which was created by the construction and operation of the Government dam at Kaukauna; that it had the right to use all the water of the stream not used for the purposes of navigation, for the purposes of power, wherever it could or chose, so far as it could do so without impairing the just rights of other owners of water powers upon the stream; that it was due to other owners of water powers below the dam that the water, after being used by it, should be returned to the stream, at such place and in such manner as that it shall flow past the banks of such lower owners in its accustomed channels, and as it was accustomed aforetime to flow," etc.

890*j* The opinions cited, and cases referred to, recognize as existing in the canal company the right to use the water power created at the dam. This right of use is not a barren, but a practical right, and is the right to so use the water that it will be available for water-power purposes, even though thereby there be some impairment of what might otherwise be the rights of lower owners. This impairment is a part of the seizure and appropriation made at the time of the construction of the dam.

Illustrations: Had the United States (or the State or company acting vicariously for the United States) builded the dam lower down on the stream, and across the point of Island No. 4, would the United States be required to turn the spill of the dam into the several channels of the river in the exact proportions the waters were wont to run,—and if so, how would this be accomplished,—and what consequences would result to the United States if not accomplished? Again: Take the dams at the foot of Lake Winnebago, where the outlet is divided into two channels by an island,—what obligation is there upon the United States to turn through each of the two channels the proportion of the water wont to run through

each? If in every case unqualifiedly the water must be returned to the respective channels, to each the quantity wont to run in each, may it not, and will it not, operate to defeat the utilization of power at the dams? If the shore line must be washed by the waters wont to pass it, why not the first foot close under the dam, as well as any foot further down the stream? And yet this requirement would defeat the utilization of power. It follows that there must of necessity be some encroachment upon the shores below. And this the court recognizes.

890*k* Says Judge Newman (61 N. W. 1124, 2nd column): "As in this case, it may be necessary to stop the entire flow of the stream by a dam, in order to divert some small part of the water for the uses of navigation. In that case the surplus water need not be permitted to run to waste. The power so created by the surplus water may be leased or sold." And (63 N. W. 1020): "The limit to its (the canal company's) right is at the point where it infringes upon the rights of others. It concedes to it all the rights which the State had or could acquire as against such lower owners. The place where it may use the water, for power, is restricted only by its duty to refrain from injuring others." * * * "But it is urged upon this motion that the language of the opinion is only general, and will not enable the trial court to determine and direct in what specific place, or in what precise manner, the water must be returned to the stream; nor how and where the respondent may lawfully use that relative proportion of the flow of the stream which is appurtenant to its bank below the dam. Probably this is a just estimation of the opinion. It has assumed to determine only the general principle by which the relative rights of the parties are to be determined, and has pronounced that general principle in general terms only. It could well do no more. The court had no concrete question before it. No such issue was made, nor such judgment asked, by the respondent's pleading; nor was any such issue adjudged by the trial court. Nor does the record furnish data by which such questions can be determined by this court. These are practical questions, which cannot be answered by the aid only of mere theory. Probably it cannot be satisfactorily predicted, in advance of experiment, just where and how the water must be returned to the stream, so as to work no injury to lower owners. Certainly it cannot be determined by a court without evidence of some kind. The court has performed its full function, in this case, when it has established the general rule which governs it."

And this language is approved by the chief justice (66 N. W. 602, 2d column), adding:

"It seems to be as definite and certain as language can make it without fixing the limit by survey and metes and bounds."

890*l* That the court recognized that the right of use of power is a practical and not a barren right, and involves some impairment of what otherwise might be the rights of lower owners, is plain.

And yet the judgment which the court holds to be a substantial

compliance with these opinions, either in fact, or as interpreted by respondents, adjudges:

(*a.*) That the canal company must return to the stream the whole water of the river far enough above the head of Island No. 4 to enable forty-three two-hundredths thereof to flow in the south channel, and one hundred and fifty-seven two-hundredths thereof to flow in the north channel, north of Island No. 4, thereby preventing appellant from using the half of the water appurtenant to the north channel, where it was using the same when the suit was commenced, and while its right to there use the same was admitted by the pleadings and adjudged by the trial court.

(*b.*) While this court holds that the place where the appellant may use the water of the pond "is restricted only by its duty to refrain from injuring others," nevertheless, in disregard thereof, the judgment requires the whole water of the river to go to the head of Island No. 4, and one hundred and fifty-seven two-hundredths of it to pass through the channel on the north side of Island No. 4, although the fact was and is that the appellant was able to draw that portion of the water appurtenant to the north bank of the river from the pond through the canal, and there use it without injury to the respondents; and by reason whereof the appellant is excluded from its accustomed use of water power appurtenant to the north half of the river, a use in the pleadings conceded by the Patten Paper Company, and alleged as a fact by the Kaukauna Paper Company. And

890*m* (*c.*) While this court holds that it "has assumed to determine only the general principle by which the relative rights of the parties are to be determined, and pronounced that general principle in general terms only, and that no issue was made or any judgment asked by the respondent's pleadings, nor adjudged by the trial court, as to how and where the appellant might lawfully use that relative proportion of the flow of the stream which is appurtenant to its bank below the dam; and that the record did not furnish data by which such questions can be determined by the court; and that those questions could not be determined by the court without appeal of some kind; that those are practical questions which cannot be answered by the aid only of mere theory. Probably it cannot be satisfactorily predicted in advance of experiment just where and how the water must be returned to the stream, so as to work no injury to lower owners; and certainly it cannot be determined by the court without evidence of some kind."

Yet the judgment, after denying the canal company's claim, which this court held was the only issue in the case, proceeds to determine in specific terms the rights of the parties, including the canal company, which had not been put in issue in the pleadings, viz: That the canal company, owning the pond, and owning the riparian right on the north bank of the river, was not at liberty to use those two rights in conjunction one with the other, but must use them separately, by determining in effect that the whole flow of the channel must go into the stream below the dam, and above the head of Island No. 4, and there be divided; and

(*d.*) While this court determined that the record did not furnish data by which the questions how and where the appellant might lawfully use the relative proportion of the flow of the stream which was appurtenant to its banks below the dam, and that these questions could not be determined by the court without evidence
890*n* of some kind, yet the court below refused to allow the pleadings to be amended so as to put these questions at issue as a foundation for evidence upon which these could be determined, and yet further, the judgment itself appears to determine these very questions so specifically that it, to use the language of the chief justice, "seems to be as definite and certain as language can make it without fixing the limit by survey and metes and bounds."

Fourth. The court erred in dismissing the appeal in question, in that it took away from the appellant its right to have the appeal considered by the court upon its merits, according to the course and practice of the court, and that it considered the same matters upon motion, contrary to the practice of the court and contrary to the statute in such case made and provided.

B. J. STEVENS,
Madison, Wis., and
E. MARINER,
Milwaukee, Wis.,
Attorneys for Appellant, The Green Bay & Miss. Canal Company.

890*o* STATE OF WISCONSIN:

Supreme Court, January Term, 1896.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs and Respondents,
against
KAUKAUNA WATER POWER COMPANY and Others, Defendants and Respondents,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff and Appellant in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED) and Others, Defendants and Respondents in Cross-complaint.

STATE OF WISCONSIN, } *ss:*
County of Dane, }

B. J. Stevens, being duly sworn, deposes and says that he is informed and believes that the respondents in the above-entitled actions, particularly The Kaukauna Water Power Company, by their respective attorneys, do interpret and understand the judgment of the superior court in said actions entered on the 27th day of September, A. D. 1895, to adjudge and determine that the canal company must turn all of the water of the river back into the river

at the foot of the Kaukauna dam; that, by their aforesaid attorneys, they the said respondents have threatened to proceed to compel the canal company to let the water go back into the river at the dam; and that pursuant thereto, about the 18th day of April,
890*p* instant, the said Kaukauna Water Power Company, by their attorneys, did cause to be served upon said canal company by service on E. Mariner, as attorney, a copy of said judgment, with notice that the said canal company do—

"Strictly obey the terms and directions of said judgment, and" * * * do "cease using or taking the water of the Fox river from the pond created by the dam proper, across said river at the city of Kaukauna, in said State of Wisconsin, for hydraulic power, through the Government canal or otherwise, so that said water is thereby prevented from flowing past the banks of the lands of the Kaukauna Water Power Company, or in the several channels of said river below said dam as it was accustomed to flow."

And further deponent saith not.

B. J. STEVENS.

Subscribed and sworn to before me this 21st day of April, A. D. 1896.

HENRY KESSENICH,
Notary Public, Dane County, Wis.

890*q* STATE OF WISCONSIN:

Supreme Court, January Term, 1896.

PATTEN PAPER COMPANY (LIMITED) *et al.*, Plaintiffs and Respondents,
against
KAUKAUNA WATER POWER COMPANY and Others, Defendants and Respondents,

and

GREEN BAY & MISSISSIPPI CANAL COMPANY, Plaintiff and Appellant in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED) and Others, Defendants and Respondents in Cross-complaint.

SIRS: Take notice that upon the affidavit of B. J. Stevens on file herein, copy of which is hereto annexed, and upon the record in the above-entitled actions, on file in the office of the clerk of the court above entitled at Madison, Wisconsin, the appellant, The Green Bay & Mississippi Canal Company, by its undersigned attorneys, will move the said court at the court-rooms of said court, in the city of Madison, Wisconsin, on the 1st day of May, A. D. 1896, at the opening of court on that day, or as soon thereafter as counsel can be heard, to vacate its order of March 10, 1896, dismissing said canal company's appeal therein, and to reinstate the same,
890*r* and for such other or further order or relief in the premises as shall be proper, with costs.

Annexed hereto is a copy of such motion and grounds therefor, and now filed herein.

Yours, etc.,

B. J. STEVENS,
Madison, Wis.,
E. MARINER,
Milwaukee, Wis.,
Attorneys for Appellant, The Green Bay & Miss. Canal Company.

To Messrs. Fish & Cary, Milwaukee, Wis., attorneys for Kaukauna Water Power Co. *et al.*; David S. Ordway, Esq., Milwaukee, Wis., attorney for Henry Hewitt, Jr., and Wm. P. Hewitt and of counsel for Kaukauna Water Power Co. *et al.*; Moses Hooper, Esq., and Messrs. Hooper & Hooper, Oshkosh, Wis., attorneys for, and George G. Green, Esq., Green Bay, Wis., of counsel for Patten Paper Co. (Limited) *et al.*

891 And afterward, to wit, on the fifth day of May, A. D. 1896, the same being the thirty-eighth day of said term, the following further proceedings were had herein in the words and figures following—that is to say:

Milwaukee Superior Court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL COMPANY, Impl'd, &c., Appellant.

And now, at this day, came the said appellant, by Mess. B. J. Stevens and Ephraim Mariner, its attorney-, and moved the court now here to re-enter its order or judgment made herein on the 10th day of March, 1896, in case the motion heretofore made to vacate the same be denied; and the court, not being now sufficiently advised of and concerning its decision herein, took time to consider of the same.

892 And afterward, to wit, on the sixth day of May, A. D. 1896, the same being the thirty-ninth day of said term, the court announced its judgment or decision upon said motions in the words and figures following—that is to say:

Milwaukee Superior Court.

PATTEN PAPER COMPANY (LIMITED), UNION PULP COMPANY, and FOX RIVER PULP AND PAPER COMPANY, Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL COMPANY, Impl'd, &c., Appellant.

The court, being now fully advised of and concerning the motions of the said appellant to vacate the order or judgment of this

court made on the 10th day of March, 1896, in this cause and reinstate said cause in this court and the motion to re-enter said order or judgment made on the 10th day of March, 1896, it is now here ordered and adjudged by this court that the motion to vacate the order or judgment of this court made March 10, 1896, be, and the same is hereby, denied with ten dollars' costs against the said appellant, and that the motion to re-enter said order be, and the same is hereby, denied without costs.

893 Upon announcing the foregoing decision the court, by Chief Justice Cassoday, rendered its opinion in the words and figures following—that is to say:

STATE OF WISCONSIN:

Supreme Court.

PATTEN PAPER CO. (LIMITED) *et al.*, Respondents,
vs.
GREEN BAY AND MISSISSIPPI CANAL COMPANY, Impleaded with Others, Appellant.

CASSODAY, *C. J.*:

The motion to dismiss the appeal in this case was granted March 10, 1896. S. C., 66 N. W. R., 601. This is a motion to vacate that order and to reinstate the appeal. It is true the motion was not made until more than thirty days after the decision dismissing the appeal, but it is claimed that in making that decision this court did not fully consider the status of the case in respect to the rights of the appellant, and hence that this is a motion to correct a mistake in the record of this court within the meaning of rule 21. The motion is in the nature of a motion for rehearing, and as such should have been made within thirty days after the decision. Rule 20. By the statute, as originally enacted, the clerk of this court was required to remit the record to the court below within thirty days after the decision unless the court directed the same to be retained for the purpose of enabling a party to move for a rehearing. Sec. 7, ch. 264, L. 1860; 2 Taylor's Statutes, sec. 7, ch. 139. By the revision of 1878 the thirty days were changed to sixty days. Sec. 3071, R. S. While the motion is irregular and might be denied on that ground, yet, under the statute, as it now stands, we have no doubt that this court has retained jurisdiction over the case, especially as the papers in the case have been retained by the direction of the court for the purposes of this motion. Krall

894 *v.* Lull, 46 Wis., 643. The case is important and should, if possible, be decided on the merits, and we feel it to be our duty to so decide it. Counsel for the appellant seems to be correct in claiming that in deciding the motion to dismiss the appeal we overlooked the fact that the complaint for the partition of the water in the river below the dam and above the head of the islands mentioned admitted that the canal company was then drawing one-half the flow of the river from the dam in and through its canal to a point below the head of Island No. 3, and there used or leased to

others to be used as water power while passing from the canal down into one or more of the channels below the dam, and that the prayer of the complaint asked no restraint of such drawing and use by the canal company, but simply asked an injunction against the Kaukauna Water Power Company, and that the court should determine and adjudge what share or proportion of the entire natural flow of the river was appurtenant to and of right should be permitted to flow in the south, middle, and north channels of the river, respectively. The purpose of the action was not to contest conflicting claims to water above the dam nor such as flowed in the canal, but to partition the water which might flow in the river below the dam between the several owners thereof, as prescribed by the statutes. Chapter 203, Laws 1881; secs. 3149–3152, S. & B. A. S.; see also secs. 3101–3148, *id.* The canal company, being a riparian owner on islands numbered three and four mentioned, was a proper and necessary party to such partition suit. *Id.* As such defendant it filed its cross-bill therein and thereby claimed not only the paramount right to all the water in the river for the purposes of navigation and the surplus water power incidental to the improvement, but also claimed the right to draw all such surplus water through the canal to any point below where it might desire, and there to use the same or lease the same to others to be used as
895 water power. The other parties to the action conced*ing* that the canal company had such paramount right for the purposes of navigation and the paramount right to all the surplus water power incidental to the improvement, to be used at the dam or so near the dam as not to impair their just rights as riparian owners on the islands below the dam, yet they denied the right of the canal company to use the canal as a mere head race to convey such surplus water to a point below or opposite the islands mentioned, and there creating a water power by emptying the same into the river. The determination of the issues thus joined made it the duty of the trial court and of this court to determine where or about where such surplus water power as was merely incidental to the construction of the dams might be used or returned to the river below the dam. With the determination so made we are entirely satisfied. S. C., 90 Wis., 370; S. C., 61 N. W. R., 1121; S. C., 63 N. W. R., 1019; S. C., 66 N. W. R., 601. The canal company obtained its right to such surplus water power merely because it was and is incidental to the improvement. Green Bay & Mississippi Canal Co. *v.* Kaukauna Water Power Co., 70 Wis., 635; S. C. affirmed on writ of error, 142 U. S., 254. See, also, Att'y Gen. *v.* Eau Claire, 37 Wis., 400; S. C., 40 Wis., 533; Bell *v.* The City of Platteville, 71 Wis., 139. To hold as contended by the canal company would, to a certain extent, at least, make the right of navigation incidental to the creation of the water power, instead of the water power being incidental to the improvement of the river for navigation. For the reasons given the motion to vacate the order dismissing the appeal and to reinstate the same is denied, with $10 costs and clerk's fees.

896 (Endorsements:) No. 67. January term, 1896. Patten Paper Co. (Limited) *et al.*, respondents, *vs.* Green Bay and Mississippi Canal Co., impleaded with others, appellant. Opinion. Cassoday, C. J. Filed May 12, 1896, *nunc pro tunc*, as of May 5, 1896. Clarence Kellogg, clerk sup. ct. Wis.

897 Office of the Clerk of the Supreme Court of the State of Wisconsin.

PATTEN PAPER COMPANY (LIMITED), UNION PULP Company, and Fox River Pulp and Paper Company, Plaintiffs,
vs.
KAUKAUNA WATER POWER COMPANY, MATTHEW J. Meade, Harriet S. Edwards, The Green Bay and Mississippi Canal Company, Michael A. Hunt, Anna Hunt, Henry Hewitt, Jr., Aug. L. Smith, Kaukauna Paper Company, American Pulp Company, W. P. Hewitt, John Jansen, Peter Reuter, Alexander Reuter, The Chicago & Northwestern Railway Company, David McCartney, G. Lind, James H. Elmore, Joseph Carlson, Brokaw Pulp Company, Badger Paper Company, B. Aymar Sands, Joseph Kline, Michael Kline, Henry D. Smith, Herman Erb, Asel W. Patten, Charles S. Fairchild, and Reese Pulp Company, and Milwaukee, Lake Shore & Western Railway Company, Defendants, } Original Cause.

and

GREEN BAY AND MISSISSIPPI CANAL COMPANY, Plaintiff in Cross-complaint,
against
PATTEN PAPER COMPANY (LIMITED), UNION PULP Company, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Defendants in Cross-complaint. } Cross-cause.

Appeals taken in above cause.

GREEN BAY & MISSISSIPPI CANAL COMPANY, Respondent,
vs.
HENRY HEWITT, JR., Appellant.

PATTEN PAPER COMPANY *et al.*, Appellants,
vs.
GREEN BAY & MISSISSIPPI CANAL COMPANY, Respondents.

KAUKAUNA WATER POWER COMPANY *et al.*, Appellants,
vs.
GREEN BAY & MISSISSIPPI CANAL COMPANY, Respondent.

898 GREEN BAY & MISSISSIPPI CANAL COMPANY, Appellant,
vs.
PATTEN PAPER COMPANY (LIMITED), UNION PULP Company, Fox River Pulp and Paper Company, Kaukauna Water Power Company, Matthew J. Meade, Harriet S. Edwards, Henry Hewitt, Jr., William P. Hewitt, and Others, Respondents.

I, Clarence Kellogg, clerk of the supreme court of the State of Wisconsin, do hereby, pursuant to the command of the annexed writ of error, return thereto as follows:

First. The said original writ of error, dated May 18, A. D. 1896.

Second. The original allowance thereof thereon endorsed, dated May 18, A. D. 1896.

Third. The original citation, with proof of personal service thereof upon the defendants in error or their respective attorneys, all made on or before June 11, A. D. 1896.

Fourth. The original assignment of errors, filed in my office May 18, A. D. 1896.

Fifth. A true copy of the petition for writ of error and supersedeas bond, filed in my office May 18, A. D. 1896.

Also a true copy of the record and proceedings now on file and of record in my office, with all things concerning the same in the above-entitled cause.

And I do certify that I have compared the copies of all papers and diagrams constituting such copy record hereto annexed with the originals of which they purport to be copies, which originals are now in my office and under my control, and that the annexed are true, full, and perfect copies of said originals and of the whole thereof and literal and correct transcripts therefrom.

And I do further certify that they are all returned to the Supreme Court of the United States in obedience to the command of the writ of error hereto annexed.

899 And I do further certify that accompanying said record and a part of and attached to the same there are six large maps or telegrams of equal size, which are copies of the exhibits referred to in the bills of exceptions contained in such record, and that I forward the same with, but not attached to, said record, pursuant to direction given by Chief Justice Cassoday.

Seal Supreme Court of Wisconsin.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at Madison, this 11th day of June, A. D. 1896.

CLARENCE KELLOGG,
Clerk of the Supreme Court of the State of Wisconsin.

Endorsed on cover: Case No. 16,321. Wisconsin supreme court. Term No., 190. The Green Bay & Mississippi Canal Company, plaintiff in error, *vs.* The Patten Paper Company (Limited), Union Pulp Company, *et al.* Filed June 19, 1896.